

# Annotated checklist of the freshwater fishes of Suriname

by

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**ABSTRACT.** - Data derived from the literature supplemented by examination of specimens in collections show that 481 species of fish live in the fresh and brackish inland waters of Suriname, with 394 of these restricted to fresh waters. These 481 species represent 16 orders and 64 families. Orders with the largest numbers of freshwater species in the Surinamese inland fish fauna are the Siluriformes (157 species), Characiformes (147 species), Perciformes (40 species), Gymnotiformes (21 species) and Cyprinodontiformes (21 species). At the family level, the Characidae has the greatest number of freshwater species (83 species), followed by the Loricariidae (60 species), the Cichlidae (30 species), the Callichthyidae (23 species), the Heptapteridae (19 species) and the Anostomidae (17 species). Present data indicate that 25 of the species are known solely from locations within Suriname and 89 species solely in Surinamese river systems including the Marowijne/Mana and Corantijn watersheds which in part extend into French Guiana and Guyana, respectively. Of 481 total species, 187 (38.9%) were based on type series that originated within Suriname. Continued descriptions of new species from the inland waters of Suriname demonstrate that the present total most likely distinctly underestimates the species-level diversity of the fish fauna. In terms of species per square kilometer, the presently documented richness of the Surinamese freshwater fish fauna is comparable to, or even greater than, the richness of fish faunas of several other tropical South American countries.

**RÉSUMÉ.** - Liste commentée des poissons dulçaquicoles du Suriname.

Les données issues de la littérature ainsi que l'examen de spécimens de collections montrent que 481 espèces de poissons vivent dans les eaux douces et saumâtres du Suriname ; 394 d'entre elles sont strictement dulçaquicoles. Ces 481 espèces représentent 16 ordres et 64 familles. Parmi l'ichtyofaune de l'intérieur du Suriname, les ordres comportant le plus grand nombre d'espèces sont les Siluriformes (157 espèces), les Characiformes (147 espèces), les Perciformes (40 espèces), les Gymnotiformes (21 espèces) et les Cyprinodontiformes (21 espèces). Au niveau familial, ce sont les Characidae qui comptent le plus grand nombre d'espèces (83 espèces), suivis des Loricariidae (60 espèces), des Cichlidae (30 espèces), des Callichthyidae (23 espèces), des Heptapteridae (19 espèces) et des Anostomidae (17 espèces). Les données actuelles indiquent que 25 espèces ne sont connues que du Suriname et 89 uniquement des systèmes fluviaux surinamais incluant les bassins du Maroni/Mana et de la Corantijne qui s'étendent respectivement en Guyane française et au Guyana. Sur les 481 espèces, 187 (38.9%) sont fondées sur les séries types originaires du Suriname. Les descriptions régulières d'espèces nouvelles des eaux intérieures surinamaises démontrent que la diversité spécifique de la faune piscicole est très vraisemblablement sous-estimée. En termes d'espèces par kilomètre carré, la richesse en poissons des eaux douces surinamaises telle qu'actuellement connue est comparable, voire même supérieure, à celle de nombreux autres pays tropicaux sud-américains.

Keywords. - Diversity - Ichthyofauna - Guiana Shield - Distribution - South America - Neotropics.

Interest in the fishes of Suriname by naturalists and scientists extends back over two centuries. Suriname is undoubtedly the site of origin of the oldest extant preserved specimens of South American fishes which were collected in the first half of the 18<sup>th</sup> century (Kullander and Nijssen, 1989), albeit in some instances with inexact locality information.

The earliest contributions to Surinamese ichthyology are incorporated into more general treatises of special natural history collections such as that of Gronovius (1754, 1756). Linnaeus, in turn, acquired some of the information for his 'Systema Naturae' (1758, 1766), the official beginning of modern taxonomic nomenclature, from his students who

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traveled throughout the world. Although one of these, Daniel Rolander (1725-1793), visited Suriname in 1755 (Holthuis, 1959), it is uncertain whether Linnaeus examined the Surinamese fish specimens collected by Rolander. Linnaeus did, however, examine the collections and read the publications of Peter Artedi (1738) who himself examined Albertus Seba's collection, King Adolf Fredrik (Linnaeus, 1754, 1764), and Laurens Theodorus Gronovius (1754, 1756) all of which included fishes that originated in rivers flowing through what is now Suriname. It is sometimes impossible to determine how or where these specimens were collected, but documentation indicates that Daniel Luyx Massis, Director of the famous West India Company, acquired fishes from Suriname for the Gronovius collection (Wheeler, 1958). Some of these Surinamese specimens are still extant as alcohol preserved samples or dried skins pressed onto paper in the collections of The Natural History Museum, London, the Zoological Museum, Copenhagen, and the Swedish Museum of Natural History, Stockholm (Wheeler, 1958, 1989; Fernholm and Wheeler, 1983). Surinamese fishes described and figured by Linnaeus (1758, 1766), with the original genus in parentheses, are: *Achirus (Pleuronectes) achirus* (Linnaeus, 1758), *Ageneiosus (Silurus) inermis* (Linnaeus, 1766), *Apteronotus (Gymnotus) albifrons* (Linnaeus, 1766), *Astyanax (Salmo) bimaculatus* (Linnaeus, 1758), *Callichthys (Silurus) callichthys* (Linnaeus, 1758), *Charax (Salmo) gibbosus* (Linnaeus, 1758), *Cichlasoma (Labrus) bimaculatum* (Linnaeus, 1758), *Crenicichla (Sparus) saxatilis* (Linnaeus, 1758), *Doras (Silurus) carinatus* (Linnaeus, 1766), *Electrophorus (Gymnotus) electricus* (Linnaeus, 1766), *Gasteropelecus (Clupea) sternicla* (Linnaeus, 1758), *Gymnotus carapo* Linnaeus, 1758, *Hypostomus (Acipenser) plecostomus* (Linnaeus, 1758), *Loricaria cataphracta* Linnaeus, 1758, *Polycentrus schomburgkii* Müller & Troschel, 1849 (due to circumstances, *Labrus punctatus* Linnaeus, 1758 is a synonym), *Pseudoplatystoma (Silurus) fasciatum* (Linnaeus, 1766), *Pterengraulis (Clupea) atherinoides* (Linnaeus, 1766), *Salmo notatus* Linnaeus, 1766 (identity of this species unclear although presumably a characiform) and *Serrasalmus (Salmo) rhombeus* (Linnaeus, 1766).

Many early scientific papers dealing with Surinamese fishes are based on material collected by non-ichthyologists to whom that discipline is greatly indebted for their collecting efforts. For example, the great Dutch ichthyologist P. Bleeker described some Surinamese fish species (e.g., *Anchovia surinamensis*, *Chasmocranus surinamensis*, *Plagioscion surinamensis*; Bleeker, 1862-1873) based on specimens collected by H.H. Dieperink in the first half of the 19<sup>th</sup> century. Holthuis (1959) and Hoogmoed (1973) extensively documented the collectors of Crustacea and Amphibia/Reptilia, respectively, from Suriname. Most of these collectors also collected fishes (in parentheses the page number in Holthuis' (LH) or Hoogmoed's (MH) papers): H.A. Beatty

(MH10), E.R. Blake (MH10), D.G.J. Bolten (LH27-28), C.F.A. Bruijning (LH33), P. Buitendijk (LH28), H.W.C. Cossee (LH30), P.H. Creutzberg (MH11), C.G. Dahlberg (LH17-19), H.H. Dieperink (LH21-23), M.H. De la Fuente (MH12), D.C. Geijskes (LH31-32), C. Hering (LH23-24), W.C. Van Heurn (LH29), J.H.C.B. Heyde (LH33), M.S. Hoogmoed (MH13), P.W. Hummelinck (LH33-34), J. Van der Kamp (LH34), H.W. Lijding (LH33), H.P. Pijpers, D. Rolander (LH19-21), E.C. Stoll (LH32-33), W. Vervoort (MH18), and J. Wyman (MH18-19).

The earliest collections of Surinamese fishes understandably originated in the more accessible plantations in the Coastal Plain and the Savannah Belt situated immediately to the south of the Coastal Plain. The remote and thus less accessible Interior did not receive attention until after 1860. The first information on the composition of the fish fauna of the interior resulted from several expeditions in the 20<sup>th</sup> century, in particular the topographical expeditions sent out by the Koninklijk Nederlandsch Aardrijkskundig Genootschap (Royal Netherlands Geographical Society). Collecting natural history objects was of secondary importance in most of the early expeditions; nonetheless, these surveys yielded significant information on the fishes of the interior (see Holthuis, 1959; Hoogmoed, 1973). The expeditions (with year and collector of fishes in parentheses, when known) are: Nickerie Expedition (1900), Coppenname Expedition (1901; H.A. Boon), Saramacca Expedition (1902-1903, P.J. de Kock), Gonini Expedition (1903-1904, G.M. Versteeg), Suriname Expedition (1908, J.H.A.T. Tresling), Corantijn Expedition (1910-1911, J.F. Hulk), Wilhelmina Mountains Expedition (1926), Coppenname Hevea Expedition (1943-1944, D.C. Geijskes), 1948-49 Suriname Expedition (1948-1949, D.C. Geijskes & P.H. Creutzberg), Medical Expedition to the southern border region (1952, D.C. Geijskes & C.F.A. Bruijning), 'Coquette' Investigations (1957, H.W. Lijding & D.C. Geijskes), Coeroeni Island Expedition (1959, D.C. Geijskes & H.P. Pijpers), Sipaliwini Expedition (1961, D.C. Geijskes & H.P. Pijpers), Wilhelmina Mountains Expedition (1963, S. Ligori & H.P. Pijpers), 1968-1970 Sipaliwini Expeditions (1968-69, 1970, M. Hoogmoed), Northwest Suriname Expedition (1971, D.C. Geijskes & M. Boeseman), Oelemarie Expedition (1999, P. Ouboter), CI-RAP Coppenname Expedition (2004, B. Chernoff, P. Willink & J. Mol), CI-RAP Nassau/Lely Mountains Expedition (2005, J. Mol & K. Wan Tong You), and CI-RAP Sipaliwini Expedition (2010, P. Willink & K. Wan Tong You).

Biological surveys related to the construction of a hydroelectric dam across the Suriname River at Afobakka (the Brokopondo project, ultimately resulting in the Brokopondo Reservoir in 1964; e.g., Mol *et al.*, 2007) proved an important stimulus to ichthyological research in Suriname. For the first time ichthyological surveys of Suriname included multiple ichthyologists (M. Boeseman, 1963-1964, 1971;

MH11, G. Mees, 1965-1966, 1972; MH15, and H. Nijssen 1966-1967; MH16) who collected large samples of fishes across the country. Although the primary focus was the Suriname River, their efforts also included sampling within the Saramacca, Coppename, Nickerie, Commewijne, Marowijne (Maroni) and Corantijn (Corentyne) rivers.

Other ichthyologists who later collected fishes in the freshwaters of Suriname were: J.P. Gosse in the Marowijne River (1966, 1969), R.P. Vari and L.R. Parenti in the Corantijn River (1979-1980), P. Planquette, Y. Thérésien and P.Y. Le Bail in the Marowijne River (1978-1995), P. Ouboter and J. Mol in the Saramacca, Nickerie/Maratakka, and Para rivers (1990-present), P. Ouboter in the Oelemarie and Tapana-honi rivers (1999), M. Jégu in the Oelemarie River (1998), C. Weber, R. Commergnat and J. Mol in the Nickerie, Saramacca and Suriname rivers (2001), J. Montoya-Burgos, R. Covain and J. Mol in the Corantijn, Suriname, Commewijne, Sipaliwini and Paloeemeu rivers (2005-2008), J. Lundberg, M. Sabaj, P. Willink and J. Mol in the Marowijne River (2007), and P. Willink in the Corantijn/Sipaliwini River (2010). Abundant material of Surinamese freshwater fishes is now available in the natural history museums of Amsterdam (collections soon to be shifted to Leiden), Chicago, Geneva, Leiden, Paramaribo, Paris, Philadelphia and Washington.

Some of these collecting efforts resulted in focused studies of the members of various genera or families occurring within Suriname. Publications of note include those on *Corydoras* by Nijssen (1970), *Hypostomus* by Boeseman (1968), the Loricariinae by Boeseman (1971), the Serrasalminae by Géry (1972), the Auchenipteridae, Heptapteridae, Pimelodidae and Pseudopimelodidae by Mees (1974), the Cichlidae by Kullander and Nijssen (1989), the Anostomoidea by Sidlauskas and Vari (2012), and the Harttiini by Covain *et al.* (2012). Complementing these geographically focused studies were revisionary analysis of genera and families of freshwater fishes across major expanses within the Neotropics, many of which added to our knowledge base of the Surinamese ichthyofauna. Ecological studies on Surinamese fishes (mainly Callichthyinae) were initiated by Mol (1993, 1994; Mol *et al.*, 1999; Mol and Ponton, 2003).

Eigenmann (1912), in his monograph on the ichthyofauna of British Guiana (= Guyana), listed 118 freshwater fish species for Suriname. Based on specimens collected during the expeditions of the first half of the 20<sup>th</sup> century that are listed above, Boeseman (1952) added another 105 fish species to Eigenmann's list, resulting in a total of 223 species known to occur in fresh- and estuarine waters of Suriname. Ouboter and Mol (1993) published the most recent list of Surinamese freshwater fishes which included 318 species. In the present paper we present a checklist with 481 fish species from the fresh and brackish waters of Suriname, a 50% increase in the last two decades and a trajectory that shows no signs of decreasing.

## MATERIAL AND METHODS

Inclusion of species in the following checklist is based on three different information sources. The first and least problematic of these were those species now recognized as valid that have type localities in the inland waters of Suriname (denoted by "T" in the checklist, Tab. I). Secondly are the species originally described from locations outside of Suriname which are included in the checklist when their occurrence within the country is documented by specialists (denoted by "S" in the checklist). This includes (1) the citation of a species for the Surinamese fish fauna in species descriptions and/or revisions of genera or families in the recent taxonomic literature, or (2) information from specialist identified voucher specimens that originated at localities in Suriname. Vouchers are deposited in various fish collections, most notably the Academy of Natural Sciences Philadelphia (ANSP, Philadelphia), Field Museum of Natural History (FMNH, Chicago), Muséum d'histoire naturelle de la Ville de Genève (MHNG, Geneva), Muséum national d'Histoire naturelle (MNHN, Paris), Netherlands Centre for Biodiversity Naturalis [NCB Naturalis, Leiden; a fusion of the Zoological Museum Amsterdam (ZMA) and the Rijks Museum voor Natuurlijke Historie (RMNH)], National Zoological Collection Suriname (NZCS, Paramaribo, Suriname), and National Museum of Natural History, Smithsonian Institution (USNM, Washington, D.C.). The third source of information are records based on identifications of specimens deposited in various collections (see above), identified by ichthyologists who are not experts on those taxa. Critical reexamination of such lots underlies the inclusion of various species in the checklist (denoted "X"). Occurrences of species in a river basin are followed by a "?" in instances when they are uncertain or questionable.

Initial information in the development of the checklist was taken from Eigenmann (1912), Boeseman (1952), Ouboter and Mol (1993), Planquette *et al.*, 1996, Keith *et al.* (2000), Le Bail *et al.* (2000), CLOFFSCA (Reis *et al.*, 2003) and Vari *et al.* (2009) and supplemented by recently published (e.g., Ouboter *et al.*, 1999; Mol *et al.*, 2006; Mol *et al.*, 2007) and unpublished checklists of the ichthyofauna of different river basins. Data were cross checked and supplemented by information in recent publications dealing with species present in Surinamese inland waters and/or describing new species of fishes from those drainage systems (Zanata, 1997; Schindler, 1998; Ferraris and Vari, 1999; Géry *et al.*, 1999; Keith and Meunier, 2000; López-Hernández and Winemiller, 2000; Casatti, 2001, 2002, 2005; Jégu and Santos, 2002; Jégu *et al.*, 2002, 2003; Crampton and Albert, 2003; Vari *et al.*, 2003, 2005, 2012; Armbruster, 2004; Castro and Vari, 2004; Malabarba, 2004; Meunier *et al.*, 2004, 2011; Willink and Sidlauskas, 2004; Zanata and Toledo-Piza, 2004; Zarske *et al.*, 2004, 2006, 2010; Reis *et al.*, 2005; Vermeulen and

Hrbek, 2005; Costa, 2006; Deynat, 2006; Keith *et al.*, 2006; Kullander and Ferreira, 2006; Mattox *et al.*, 2006; Zarske and Géry, 2006, 2008; Buitrago-Suárez and Burr, 2007; Ferraris, 2007; Lucena, 2007; Marceniuk and Menezes, 2007; de Chambrier and Montoya-Burgos, 2008; Ortí *et al.*, 2008; Rosa *et al.*, 2008; Sabaj Pérez and Birindelli, 2008; Sarmiento-Soares and Martins-Pinheiro, 2008; Sidlauskas and Vari, 2008, 2012; Cardoso and Montoya-Burgos, 2009; Oyakawa and Mattox, 2009; Parisi and Lundberg, 2009; Lucena and Malabarba, 2010; Mirande, 2010; de Santana and Vari, 2010; Willink *et al.*, 2010; Alexandrou *et al.*, 2011; Melo *et al.*, 2011; Moreira and Lima, 2011; Sidlauskas *et al.*, 2011; Covain *et al.*, 2012; Fisch-Muller *et al.*, 2012; Weber *et al.*, 2012).

The checklist basically follows the taxonomic classification used by Reis *et al.* (2003) updated to reflect later taxonomic actions and, for marine migrants Nelson (2006), with (sub)families arranged in systematic order, and genera and

species of each family and subfamily listed alphabetically. Genus names in Ariidae follow Marceniuk and Menezes (2007) and genus names in Serrasalminae follow Meunier *et al.* (2004) and Ortí *et al.* (2008).

In the checklist (Tab. I), we included species which spend their entire lives in fresh water (indicated by 'F' in the habitat column), species that at least extend into fresh waters with some regularity and occur in brackish but not marine waters (indicated by 'F(B)'), species that live in the brackish water of estuaries, canals and coastal lagoons (indicated by 'B'; e.g., the Bigi Pan Lagoon in Nickerie district, northwestern Suriname), and marine fishes that migrate seasonally into estuaries and the lower freshwater reaches of rivers (indicated by 'M'). In the absence of information on salinity tolerance and life history, it is difficult to accurately designate many species in the present checklist that live in the 'fuzzy' area between the ocean and the river to one of the above categories. In addition, the near-shore coastal waters

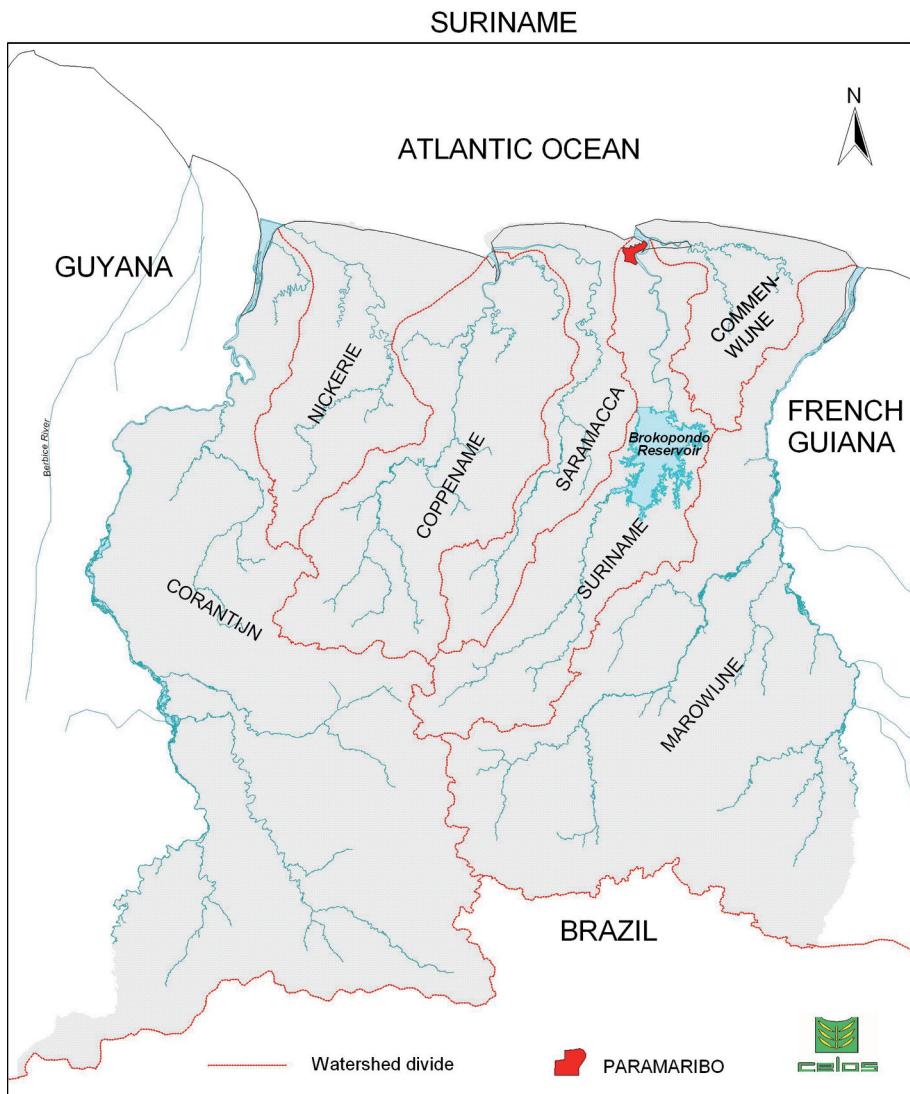


Figure 1. - Map of Suriname showing the seven main river basins from east to west: Marowijne (Maroni), Commewijne, Suriname, Saramacca, Coppename, Nickerie and Corantijn (Corentyne) rivers.

Table I. - Checklist of the freshwater fishes of Suriname. Listing includes freshwater species (F), species that at least extend into fresh waters with some regularity and do not occur in sea (F(B)), brackish-water species (B) and marine species that seasonally penetrate into the lower reaches of rivers (M); e.g., FB denotes a species that occurs in both fresh and brackish water. Occurrences in the river systems of Suriname are denoted as T (type locality), S (identified by a specialist in the group) and X (present in museum collections, identified by an ichthyologist that is not a specialist in the taxon). Type localities 'Suriname', without precise localities, are indicated in the corresponding column. T(B72): "type-locality may well be restricted to", according to Boeseman (1972). Introduced species not native to Suriname are marked with an asterisk; a question mark is added if the introduction is considered questionable.

	Taxa	Habitat	Corantijn	Nickerie	Coppename	Saramaccia	Suriname	Commewijne	Marowijne	'Suriname'
<b>Order: Pristiformes</b>										
<b>Family: Pristidae</b>										
<i>Pristis peronii</i> Müller & Henle, 1841	MB					X			X	
<b>Order: Myliobatiformes</b>										
<b>Family: Potamotrygonidae</b>										
<i>Potamotrygon doezemani</i> Rosa, Carvalho & Wanderley, 2008	F	T								
<i>Potamotrygon mariae</i> Deynat, 2006	F									
<i>Potamotrygon orbignyi</i> (Castelnau, 1855)	F	X	X	X			S			
<b>Order: Elopiformes</b>										
<b>Family: Megalopidae</b>										
<i>Megalops atlanticus</i> Valenciennes, 1847	FBM	X				X	X			
<b>Family: Elopidae</b>										
<i>Elops saurus</i> Linnaeus, 1766	BM		X			X	X			
<b>Order: Clupeiformes</b>										
<b>Family: Clupidae</b>										
<i>Harengula jaguana</i> Poey, 1865	FBM			X			S			
<i>Opisthonema oglinum</i> Lesueur, 1818	BM		X			X	X			
<i>Rhinosardinia amazonica</i> (Steindachner, 1879)	FBM				S		S			
<b>Family: Engraulidae</b>										
<i>Anchoa spinifer</i> (Valenciennes, 1848)	FBM	X	X				S			
<i>Anchovia clupeoides</i> (Swainson, 1839)	BM	X						X		
<i>Anchovia surinamensis</i> (Bleeker, 1865)	FB	X					S			
<i>Anchoviella brevirostris</i> (Günther, 1868)	BM	X					X			
<i>Anchoviella cayennensis</i> (Puyo, 1946)	B							X		
<i>Anchoviella guianensis</i> (Eigenmann, 1912)	FB	X					S			
<i>Anchoviella leptidentostole</i> (Fowler, 1911)	FBM	X					X			
<i>Anchoviella</i> sp.	F							S		
<i>Cetengraulis edentulus</i> (Cuvier, 1829)	BM	S					X			
<i>Lycengraulis batesii</i> (Günther, 1868)	FB	X					S			
<i>Lycengraulis grossidens</i> (Spix & Agassiz, 1829)	FBM	X					X			
<i>Pterengraulis atherinoides</i> (Linnaeus, 1766)	FB	X					S			
<b>Family: Pristigasteridae</b>										
<i>Odontognathus macrourus</i> Lacepède, 1800	FBM	S					X			
<i>Pellona flavipinnis</i> (Valenciennes, 1837)	FB	X					X			
<i>Pellona narrowi</i> (Fowler, 1917)	MB	S					X			

Table I. - Continued.

	Taxa	Habitat	Corantijn	Nickerie	Coppename	Saramacca	Suriname	Commewijne	Marowijne	‘Suriname’
<b>Order: Characiformes</b>										
<b>Family: Parodontidae</b>										
<i>Parodon guyanensis</i> Géry, 1959	F	S		X	S	X				
<b>Family: Curimatidae</b>										
<i>Curimata cyprinoides</i> (Linnaeus, 1766)	F	S	S		X	S				
<i>Curimatopsis crypticus</i> Vari, 1982	F	X			X	X				
<i>Cyphocharax biocellatus</i> Vari, Sidlauskas & Le Bail, 2012	F	S		X	S	T				
<i>Cyphocharax helleri</i> (Steindachner, 1910)	F	S	S				X			
<i>Cyphocharax microcephalus</i> (Eigenmann & Eigenmann, 1889)	F	S		X	S	S				
<i>Cyphocharax punctatus</i> (Vari & Nijssen, 1986)	F	S	S		X	S				
<i>Cyphocharax spilurus</i> (Günther, 1864)	F	S		X	S	S				
<i>Steindachnerina variii</i> Géry, Planquette & Le Bail, 1991	F	S		X	S	S				
<b>Family: Prochilodontidae</b>										
<i>Prochilodus rubrotaeniatus</i> Jardine, 1841	F	S		X						
<i>Semaprochilodus variii</i> Castro, 1988	F									
<b>Family: Anostomidae</b>										
<i>Anostomus anostomus</i> (Linnaeus, 1758)	F	S			S	X				
<i>Anostomus brevior</i> Géry, 1961	F									
<i>Anostomus teneri</i> Fernández-Yépez, 1949	F									
<i>Hypomasticus despaxi</i> (Puyo, 1943)	F									
<i>Hypomasticus megalopterus</i> (Günther, 1863)	F	S		X						
<i>Leporinus apollo</i> Sidlauskas, Mol & Vari, 2011	F	S			S					
<i>Leporinus arcus</i> Eigenmann, 1912	F	S		X	S	X				
<i>Leporinus fasciatus</i> (Bloch, 1794)	F	X		X	S	X				
<i>Leporinus fribolerti</i> (Bloch, 1794)	F	S		X						
<i>Leporinus gossei</i> Géry, Planquette & Le Bail, 1991	F									
<i>Leporinus granti</i> Eigenmann, 1912	F	S								
<i>Leporinus lebaili</i> Géry & Planquette, 1983	F									
<i>Leporinus maculatus</i> Müller & Troschel, 1844	F	S	S		S	S				
<i>Leporinus nijsseni</i> Garavello, 1990	F	S			S	S				
<i>Petulanos plicatus</i> (Eigenmann, 1912)	F	S								
<i>Petulanos spilodistron</i> (Winterbottom, 1974)	F									
<i>Schizodon fasciatus</i> Spix & Agassiz, 1829	F	S								
<b>Family: Chilodontidae</b>										
<i>Caenotropus labyrinthicus</i> (Kner, 1858)	F	S								
<i>Caenotropus maculatus</i> (Eigenmann, 1912)	F	S								
<i>Chilodus punctatus</i> Müller & Troschel, 1844	F									
<i>Chilodus zaneveri</i> Puyo, 1946	F									
<b>Family: Crenuchidae</b>										
<i>Characium pellucidum</i> Eigenmann, 1909	F									

Table I. - Continued.

Taxa	Taxa	Habitat	Corantijn	Nickerie	Coppenname	Saramacca	Suriname	Commewijne	Marowijne	‘Suriname’
<i>Characidium zebra</i> Eigenmann, 1909	F	X	X	X	X	X	X	X	X	X
<i>Crenichthys spilurus</i> Günther, 1863	F	X	X	X	X	X	S	X	X	X
<i>Melanocharacidium bimaculatum</i> Eigenmann, 1909	F	X	X	X	X	X	X	X	X	X
<i>Melanocharacidium dispilonema</i> Buckup, 1993	F	X	X	X	X	X	X	X	X	X
<i>Microcharacidium eleotrioides</i> (Géry, 1960)	F	X	X	X	S	X	X	X	X	X
<b>Family: Hemiodontidae</b>										
<i>Argoneutes longiceps</i> (Kner, 1858)	F	T	S	S	S	S	S	S	S	X
<i>Bivibranchia bimaculata</i> Vari, 1985	F	S	S	S	S	S	S	S	S	S
<i>Bivibranchia simulata</i> Géry, Planquette & Le Bail, 1991	F	S	S	S	S	S	S	S	S	S
<i>Hemiododus argenteus</i> Pellegrin, 1909	F	X	X	S	X	X	X	X	X	X
<i>Hemiododus huanalti</i> (Géry, 1964)	F	X	X	X	X	X	X	X	X	X
<i>Hemiododus quadrimaculatus</i> Pellegrin, 1909	F	X	X	X	X	X	X	X	X	X
<i>Hemiododus unimaculatus</i> Bloch, 1794)	F	X	X	X	X	X	S	S	S	S
<b>Family: Gasteropelecidae</b>										
<i>Carnegiella strigata</i> (Günther, 1864)	F	X	X	X	X	X	S	S	S	S
<i>Gasteropelecus sternicla</i> (Linnaeus, 1758)	F	S	X	X	X	X	S	S	S	S
<b>Family: Alestidae</b>										
<i>Chalceus macrolepidotus</i> Cuvier, 1818	F									
<b>Family: Characidae</b>										
Taxa incertae sedis										
<i>Aphyocharactium melanatum</i> (Eigenmann, 1912)	F	X	X	X	X	X	X	X	X	X
<i>Astyianax bimaculatus</i> (Linnaeus, 1758)	F	S	X	S	X	X	X	X	X	X
<i>Astyianax validus</i> Géry, Planquette & Le Bail, 1991	F	X	S	S	X	X	X	X	X	S
<i>Bryconops affinis</i> (Günther, 1864)	F	S	X	S	X	X	X	X	X	X
<i>Bryconops caudomaculatus</i> (Günther, 1864)	F	X	S	S	X	X	X	X	X	X
<i>Bryconops melanurus</i> (Bloch, 1794)	F	X	X	X	X	X	X	X	X	X
<i>Ctenobrycon spilurus</i> (Valenciennes, 1850)	F	X	X	X	X	X	S	S	S	S
<i>Hemigrammus bellottii</i> (Steindachner, 1882)	F	X	X	X	X	X	S	S	S	S
<i>Hemigrammus boesemani</i> Géry, 1959	F	X	X?	X?	X	X	X	X	X	X
<i>Hemigrammus guyanensis</i> Géry, 1959	F	S	X	X	X	X	S	S	S	S
<i>Hemigrammus lunatus</i> Durbin in Eigenmann, 1918	F	S	X	X	X	X	S	X	S	S
<i>Hemigrammus ocellifer</i> (Steindachner, 1882)	F	X	X	X	X	X	X	X	X	S
<i>Hemigrammus orthus</i> Durbin, 1909	F	X	X	X	X	X	X	X	X	S
<i>Hemigrammus rodwayi</i> Durbin, 1909	F	X	X	X	X	X	X	X	X	S
<i>Hemigrammus unilineatus</i> (Gill, 1858)	F	T								S
<i>Hyphessobrycon copelandi</i> Durbin in Eigenmann, 1906	F									S
<i>Hyphessobrycon georgetiae</i> Géry, 1961	F									S
<i>Hyphessobrycon minimus</i> Durbin, 1909	F									S
<i>Hyphessobrycon minor</i> Durbin, 1909	F									S?

Table I. - Continued.

Taxa	Taxa	Habitat	Corantijn	Nickerie	Coppenname	Saramacca	Suriname	Commewijne	Marowijne	'Suriname'
<i>Hyphessobrycon rosaceus</i> Durbin, 1909	F	S	X	X	X	S	S	X	T	X
<i>Hyphessobrycon roseus</i> (Géry, 1960)	F	X								
<i>Hyphessobrycon simulatus</i> (Géry, 1960)	F	X	X	X	X	S	S			S
<i>Hyphessobrycon</i> sp. 'redline'?	F	X	X	X	X	S	S			T
<i>Jupiaba abramoides</i> (Eigenmann, 1909)	F	X	X	X	X	S	S			T
<i>Jupiaba keithi</i> (Géry, Planquette & Le Bail, 1996)	F	X	X	X	X	S	S			T
<i>Jupiaba maroniensis</i> (Géry, Planquette & Le Bail, 1996)	F	X	X	X	X	S	S			X
<i>Jupiaba meunieri</i> (Géry, Planquette & Le Bail, 1996)	F	S	X	X	X	S	S			X?
<i>Jupiaba ocellata</i> (Géry, Planquette & Le Bail, 1996)	F	S	X	X	X	S	S			X
<i>Jupiaba pinnata</i> (Eigenmann, 1909)	F	S	X	X	X	S	S			X
<i>Jupiaba polylepis</i> (Günther, 1864)	F	S	X	X	X	S	S			X
<i>Moenkhausia chrysargyreia</i> (Günther, 1864)	F	X	X	X	X	X	X			X
<i>Moenkhausia colletti</i> (Steindachner, 1882)	F	S	X	X	X	X	X			X
<i>Moenkhausia georgiae</i> Géry, 1965	F	S	S	X	X	X	X			S
<i>Moenkhausia grandisquamis</i> (Müller & Troschel, 1845)	F	X	X	X	X	X	X			S
<i>Moenkhausia hemigrammoides</i> Géry, 1965	F	S	X	X	X	S	S			S
<i>Moenkhausia intermedia</i> Eigenmann, 1908	F	S	X	X	X	S	S			X
<i>Moenkhausia lepidura</i> (Kner, 1858)	F	X?	X?	X?	X?	X	X			X?
<i>Moenkhausia moisae</i> Géry, Planquette & Le Bail, 1995	F	X	X	X	X	T	S			T
<i>Moenkhausia oligolepis</i> (Günther, 1864)	F	X	X	X	X	X	X			X
<i>Moenkhausia surinamensis</i> Géry, 1965	F	X	X	X	X	X	X			X?
<i>Paracheirodon aequipinnatus</i> (Schultz, 1956)*	F	X	X	X	X	X	X			X
<i>Pristella maxillaris</i> (Ulrey, 1894)	F	X	X	X	X	X	X			X
<i>Thayeria ifati</i> Géry, 1959	F									
<b>Subfamily: Iguanodectinae</b>										
<i>Iguanodectes</i> aff. <i>purusii</i> (Steindachner, 1908)	F	X			X		X			X
<i>Piabucus denotatus</i> (Kohlreuter, 1763)	F									X
<b>Subfamily: Bryconinae</b>										
<i>Brycon falcatus</i> Müller & Troschel, 1844	F	X			X		X			X
<i>Brycon pesu</i> Müller & Troschel, 1845	F	S			X		X			X
<i>Triportheus brachipomus</i> (Valenciennes, 1850)	F									S
<b>Subfamily: Serrasalminae</b>										
<i>Acnodon oligacanthus</i> (Müller & Troschel, 1844)	F	S	S	S	S	S	S			S
<i>Metynnis altidorsalis</i> Ahl, 1923	F	S	S	S	S	S	S			X
<i>Myleus setiger</i> Müller & Troschel, 1844	F									
<i>Myloplus</i> aff. <i>ternetzi</i>	F									
<i>Myloplus planquettei</i> Jégu, Keith & Le Bail, 2003	F									T
<i>Myloplus rhomboidalis</i> (Cuvier, 1818)	F									S
<i>Myloplus rubripinnis</i> (Müller & Troschel, 1844)	F									S

Table I. - Continued.

Taxa	Habitat	Corantijn	Nickerie	Coppename	Saramacca	Suriname	Commewijne	Marowijne	‘Suriname’
<i>Myloplus ternetzi</i> (Norman, 1929)	F	S			S	S	X	S	
<i>Pygeophis tigrinus</i> (Cuvier, 1819)	F	X			X	S		S	
<i>Pristobrycon eigenmanni</i> (Norman, 1929)	F				X			S	
<i>Pristobrycon striolatus</i> (Steindachner, 1908)	F	S	X					S	
<i>Serrasalmus rhombeus</i> (Linnaeus, 1766)	F							S	
<i>Tometes lebailii</i> Jégu, Keith & Belmont-Jégu, 2002	F				T	X		T	
<b>Subfamily: Aphyocharacinae</b>									
<i>Aphyocharax erythrinus</i> Eigenmann, 1912	F	S							
<b>Subfamily: Characinae</b>									
<i>Charax gibbosus</i> (Linnaeus, 1758)	F	X	X	X?	X	S	X?	X?	T
<i>Charax aff. pauciradiatus</i> Günther, 1864	F	X			X?	X	S	X	
<i>Cynopotamus essequibensis</i> Eigenmann, 1912	F	X			X	X?	X	S	
<i>Phenacogaster carteri</i> (Norman, 1934)	F	X			X	X?	X	S	
<i>Phenacogaster microstictus</i> Eigenmann, 1909	F	X			X	X?	X	S	
<i>Phenacogaster wayana</i> Le Bail & Lucena, 2010	F	S			X	X	S	T	
<i>Roeboides guyanensis</i> (Géry, 1959)	F	S			X	X	S		
<i>Roeboides affinis</i> (Günther, 1868)	F	X			X	X			
<b>Subfamily: Stethaprioninae</b>									
<i>Brachychalcinus orbicularis</i> (Valenciennes, 1850)	F	S			X	S	S	S	
<i>Popiella brevispina</i> Reis, 1989	F	S			X	S	S	S	
<i>Popiella longipinnis</i> (Popita, 1901)	F	S	T		X?	X?	S		
<b>Subfamily: Tetragonopterinae</b>									
<i>Tetragonopterus chalceus</i> Spix & Agassiz, 1829	F	X			X	S	X	X	
<i>Tetragonopterus rutilus</i> (Zarske, Géry & Isbrücker, 2004)	F	S			X	X		T	
<b>Subfamily: Stevardiinae</b>									
<i>Bryconamericus guyanensis</i> Zarske, Le Bail & Géry, 2010	F								
<i>Bryconamericus heterostethus</i> Eigenmann, 1908	F								
<i>Bryconamericus</i> aff. <i>hypophthalmus</i> Eigenmann, 1909	F	X							
<i>Cregnuttus melanotomus</i> Eigenmann, 1909	F	X							
<i>Hemibrycon surinamensis</i> Géry, 1962	F								
<b>Subfamily: Cheirodontinae</b>									
<i>Odontostilbe gracilis</i> (Géry, 1960)	F	S							
<b>Family: Acestrorhynchidae</b>									
<i>Acestrorhynchus falcatus</i> (Bloch, 1794)	F	X	X	X	X	X	X	X	
<i>Acestrorhynchus microlepis</i> (Jardine, 1841)	F	X	X	X	X	X	X	X	
<b>Family: Cyprodontidae</b>									
<i>Cynodon gibbus</i> (Agassiz, 1829)	F	X							
<i>Cynodon meionactis</i> Géry, Le Bail & Keith, 1998	F							T	
<b>Family: Erythrinidae</b>									
<i>Erythrinus erythrinus</i> (Bloch & Schneider, 1801)	F	X	X	X	X	X	S	X	T

Table I. - Continued.

Taxa	Habitat	Corantijn	Nickerie	Coppenname	Saramacca	Suriname	Commewijne	Marowijne	‘Suriname’
<i>Hopliorhynchus unitaeniatus</i> (Spix & Agassiz, 1829)	F	X	X	X	X	S	X	X	X
<i>Hoplias aimara</i> (Valenciennes, 1847)	F	X	X	X	X	X	X	X	X
<i>Hoplias curupira</i> Oyakawa & Mattox, 2009	F	X	S	S	S	S	X?	X?	X?
<i>Hoplias malabaricus</i> (Bloch, 1794)	F	X	X	X	X	X	X	X	T
<b>Family: Lebiasinidae</b>									
<i>Copella arnoldi</i> (Regan, 1912)	F	X	X	X	X	S	S	S	S
<i>Nannostomus beckfordi</i> Günther, 1872	F	X	X	X	X	S	S	X	S
<i>Nannostomus bifasciatus</i> Hoedeman, 1954	F	X	X	X	X	X	X	X	S
<i>Nannostomus harrisoni</i> (Eigenmann, 1909)*	F	X	X	X	X	X	X	X	X
<i>Nannostomus marginatus</i> Eigenmann, 1909	F	S	S	S	S	S	S	S	S
<i>Pyrhulina filamentosa</i> Valenciennes, 1847	F	X	X	X	S	S	S	S	T
<i>Pyrhulina stoli</i> Boeseman, 1953	F	X	X	X	S	S	S	S	T
<b>Order: Siluriformes</b>									
<b>Family: Cetopsidae</b>									
<i>Cetopsisnum minutum</i> (Eigenmann, 1912)	F	X	X?	X?	T	X?	X	X	S
<i>Cetopsisnum orientale</i> (Van, Ferraris & Keith, 2003)	F	S	X	X	X	S	X	X	S
<i>Helegenes marmoratus</i> Günther, 1863	F	S	S	S	S	S	S	S	S
<b>Family: Aspredinidae</b>									
<i>Aspredinichthys filamentosus</i> (Valenciennes, 1840)	F(B)	X	X	S	S	S	S	S	S
<i>Aspredinichthys tibicen</i> (Valenciennes, 1840)	F(B)	X	S	S	S	S	S	S	S
<i>Aspredo aspredo</i> (Linnaeus, 1758)	F(B)	X	S	S	S	S	S	S	S
<i>Bunocephalus aloikae</i> Hoedeman, 1961	F	S	S	S	S	S	S	S	T?
<i>Bunocephalus amaurus</i> Eigenmann, 1912	F	S	S	S	S	S	S	S	T
<i>Bunocephalus coracoideus</i> (Cope, 1874)	F	S	S	S	S	S	S	S	X?
<i>Bunocephalus verrucosus</i> (Walbaum, 1792)	F	X	X	S	S	S	S	S	S
<i>Planystacus corylephorus</i> Bloch, 1794	F(B)	X	X	X	X	X	X	X	X
<b>Family: Trichomycteridae</b>									
<i>Ituglanis amazonicus</i> (Steindachner, 1882)	F	X	X	X	X	X	X	X	X
<i>Ituglanis gracilior</i> (Eigenmann, 1912)	F	X	X	X	X	X	X	X	X
<i>Ituglanis</i> sp. (Brownberg Mountains)	F	X	X	X	X	X	X	X	X
<i>Ochmacanthus flabelliferus</i> Eigenmann, 1912	F	X?	X?	X?	X?	X?	X?	X?	X?
<i>Ochmacanthus reinhardti</i> (Steindachner, 1882)	F	X?	X?	X?	X?	X?	X?	X?	X?
<i>Trichomycterus aff. contradi</i> Eigenmann, 1912	F	X?	X?	X?	X?	X?	X?	X?	X?
<i>Trichomycterus guianensis</i> (Eigenmann, 1909)	F	X	X	X	X	X	X	X	T
<b>Family: Callichthyidae</b>									
<b>Subfamily: Callichthyinae</b>									
<i>Callichthys callichthys</i> (Linnaeus, 1758)	F	X	X	X	X	X	X	X	X
<i>Hoplosternum littorale</i> (Hancock, 1828)	F	S	S	S	S	S	S	S	S
<i>Megalechis thoracata</i> (Valenciennes, 1840)	F	S	S	S	S	S	S	S	S

Table I. - Continued.

Taxa	Habitat	Corantijn	Nickerie	Coppename	Saramaccia	Suriname	Commewijne	Marowijne	‘Suriname’
<b>Subfamily: Corydoradinae</b>									
<i>Corydoras aeneus</i> (Gill, 1858)	F	S		S	S	S	S	X	
<i>Corydoras baderi</i> Geisler, 1969	F	T		S					T-C.
<i>Corydoras bicolor</i> Nijssen & Isbrücker, 1967	F	S	X		S				<i>oelmannensis</i>
<i>Corydoras boesemani</i> Nijssen & Isbrücker, 1967	F	T			T				
<i>Corydoras brevis</i> Isbrücker & Nijssen, 1992	F	T							
<i>Corydoras aff. brevi</i>	F	S							
<i>Corydoras brevirostris</i> Fraser-Brunner, 1947	F	T							
<i>Corydoras coppenanensis</i> Nijssen, 1970	F	X							
<i>Corydoras filamentosus</i> Nijssen & Isbrücker, 1983	F	S							
<i>Corydoras geoffroy Lacépède, 1803</i>	F	T							
<i>Corydoras guianensis</i> Nijssen, 1970	F	S							
<i>Corydoras heteromorphus</i> Nijssen, 1970	F	T							X?
<i>Corydoras melanistius</i> Regan, 1912	F	S							
<i>Corydoras nanus</i> Nijssen & Isbrücker, 1967	F	S							
<i>Corydoras oxyrhynchus</i> Nijssen & Isbrücker, 1967	F	T							
<i>Corydoras punctatus</i> (Bloch, 1794)	F	S							
<i>Corydoras saucyae</i> Nijssen & Isbrücker, 1967	F	T							
<i>Corydoras saramaccensis</i> Nijssen, 1970	F	S							
<i>Corydoras siamensis</i> Hoedeman, 1965	F	T							
<i>Corydoras surinamensis</i> Nijssen, 1970	F	S							
<b>Family: Loricariidae</b>									
<b>Subfamily: Hypoptopomatinae</b>									
Gen.nov. aff. <i>Parotocinclus</i> sp. (see Le Bail <i>et al.</i> , 2000)	F								
<i>Hypoptopoma guianense</i> Boeseman, 1974	F	S	X						
<i>Otocinclus mariae</i> Fowler, 1940	F								
<i>Parotocinclus britskii</i> Boeseman, 1974	F								
<b>Subfamily: Loricariinae</b>									
<i>Cteniloricaria planystoma</i> (Günther, 1868)	F	S	X?						
<i>Farlowella reticulata</i> Boeseman, 1971	F								
<i>Farlowella rugosa</i> Boeseman, 1971	F								
<i>Harttia guianensis</i> Rapp Py-Daniel & Oliveira, 2001	F								
<i>Harttia fluminensis</i> Covain & Fisch-Muller, 2012	F								
<i>Harttia surinamensis</i> Boeseman, 1971	F								
<i>Harttia crassicauda</i> Boeseman, 1953	F(B)	X?							
<i>Loricaria cataphracta</i> Linnaeus, 1758	F	S	T						
<i>Loricaria nickeriensis</i> Isbrücker, 1979	F	S							
<i>Loricariichthys maculatus</i> (Bloch, 1794)	F								

Table I. - Continued.

Taxa	Habitat	Corantijn	Nickerie	Coppenname	Saramacca	Suriname	Commewijne	Marowijne	‘Suriname’
<i>Metaloricaria nijsseni</i> (Boeseman, 1976)	F	F	S	S	S	S		T	
<i>Metaloricaria paucidens</i> Isbrücker, 1975	F	F	S	S	S	S		S	
<i>Rineloricaria fallax</i> (Steindachner, 1915)	F	F	S	S	S	S		S	
<i>Rineloricaria stewarti</i> (Eigenmann, 1909)	F	F	S	S	S	S		S	
<i>Rineloricaria aff. stewarti</i>	F	F	S	S	S	S		S	
<i>Rineloricaria</i> sp. 1	F	F	S	S	S	S		S	
<i>Rineloricaria</i> sp. 2	F	F	S	S	S	S		S	
<b>Subfamily: Hypostominae</b>									
<i>Ancistrus</i> aff. <i>hoplogeus</i> (Günther, 1864)	F	F	S	S	S	S		S	
<i>Ancistrus</i> gr. <i>leucostictus</i> (Günther, 1864)	F	F	S	T	S	S		S	
<i>Ancistrus</i> sp.	F	F	S	T	S	S		T	
<i>Ancistrus neminnickii</i> (Valenciennes, 1840)	F	F	S	T	S	S		T	
<i>Guyanancistrus brevispinis</i> (Heitmans, Nijssen & Isbrücker, 1983)	F	F	S	T	S	S		T	
<i>Guyanancistrus</i> sp. (Nassau Mountains)	F	F	S	T	S	S		T	
<i>Hemiancistrus macrops</i> (Lütken, 1874)	F	F	T	T	S	S		T	
<i>Hemiancistrus medians</i> (Kner, 1854)	F	F	T	T	S	S		T	
<i>Hemiancistrus megacephalus</i> (Günther, 1868)	F	F	T	T	S	S		T	
<i>Hypostomus coppenamensis</i> Boeseman, 1968	F	F	T	T	S	S		T	
<i>Hypostomus corantini</i> Boeseman, 1969	F	F	T	T	S	S		T	
<i>Hypostomus crassicauda</i> Boeseman, 1968	F	F	T	T	S	S		T	
<i>Hypostomus gymnorhynchus</i> (Norman, 1926)	F	F	T	T	S	S		T	
<i>Hypostomus macrophthalmus</i> Boeseman, 1968	F	F	T	T	S	S		S	
<i>Hypostomus micromaculatus</i> Boeseman, 1968	F	F	S	T	S	S		S	
<i>Hypostomus paucimaculatus</i> Boeseman, 1968	F	F	S	T	S	S		S	
<i>Hypostomus plecostomus</i> (Linnaeus, 1758)	F	F	S	X	S	S		X	
<i>Hypostomus pseudohemimatus</i> Boeseman, 1968	F	F	S	S	S	S		S	
<i>Hypostomus saramaccensis</i> Boeseman, 1968	F	F	S	T	S	S		S	
<i>Hypostomus taphorni</i> (Lileystrom, 1984)	F	F	S	X	S	S		X	
<i>Hypostomus watwata</i> Hancock, 1828	F	F	S	S	S	S		S	
<i>Lithoxus gr. boyallii</i> (Regan, 1906)	F(B)	F	S	S	S	T		S	
<i>Lithoxus pallidimaculatus</i> Boeseman, 1982	F	F	S	S	S	T		S	
<i>Lithoxus planquettei</i> Boeseman, 1982	F	F	S	S	S	T		X	
<i>Lithoxus stocki</i> Nijssen & Isbrücker, 1990	F	F	S	S	S	T		T	
<i>Lithoxus surinamensis</i> Boeseman, 1982	F	F	S	S	S	T		S	
<i>Panaqolus</i> sp.	F	F	S	S	S	S		T	
<i>Panaqolus kokko</i> Fisch-Muller & Covain, 2012	F	F	S	S	S	S		S	
<i>Panaqolus</i> sp.	F	F	S	S	S	S		S	

Table I. - Continued.

Taxa	Taxa	Habitat	Corantijn	Nickerie	Coppename	Saramacca	Suriname	Commewijne	Marowijne	‘Suriname’
<i>Peckoltia otalii</i> Fisch-Muller & Covain, 2012	F	F						S	T	T
<i>Peckoltia</i> sp.	F	F						S		
<i>Pseudacanthicus fordii</i> (Günther, 1868)	F	F								
<i>Pseudacanthicus serratus</i> (Valenciennes, 1840)	F	F	S							
<i>Pseudacanthicus</i> sp.	F	F								
<i>Pseudancistrus barbatus</i> (Valenciennes, 1840)	F	T								
<i>Pseudancistrus corantijnensis</i> de Chambrier & Montoya-Burgos, 2008	F	F								
<i>Pseudancistrus depressus</i> (Günther, 1868)	F	S								
<i>Pseudancistrus kwinti</i> Willink, Mol & Chernoff, 2010	F	T								
<i>Squaliforma tenuis</i> (Boeseman, 1968)	F									
<b>Family: Pseudopimelodidae</b>										
<i>Barboglanis rutilus</i> (Valenciennes, 1840)	F	F	S							
<i>Barboglanis villosus</i> (Eigenmann, 1912)	F	F	T							
<i>Cephalosilurus nigricaudus</i> (Mees, 1974)	F	F	S							
<i>Microglanis poecilius</i> Eigenmann, 1912	F	F	S							
<i>Microglanis secundatus</i> Mees, 1974	F	F	T							
<i>Pseudopimelodus bifonius</i> (Valenciennes, 1840)	F	F	S							
<b>Family: Heptapteridae</b>										
<i>Brachyhamdia heteropleura</i> (Eigenmann, 1912)	F	S								
<i>Chasmocranus brevior</i> Eigenmann, 1912	F	F	S							
<i>Chasmocranus longior</i> Eigenmann, 1912	F	F	F							
<i>Chasmocranus surinamensis</i> (Bleeker, 1862)	F	F	X							
<i>Heptapterus bleekeri</i> Boeseman, 1953	F	F	T							
<i>Heptapterus tapanahoniensis</i> Mees, 1967	F	F	S							
<i>Imparfinis aff. stictonotus</i> (Fowler, 1940)	F	F								
<i>Imparfinis hasemani</i> Steindachner, 1915	F	F								
<i>Imparfinis pijversi</i> (Hoedeman, 1961)	F	F								
<i>Mastiglanis</i> cf. <i>asopos</i> Bockmann, 1994	F	F								
<i>Phenacorhamdia tenuis</i> (Mees, 1986)	F	F								
<i>Pimelodella cristata</i> (Müller & Troschel, 1848)	F	F								
<i>Pimelodella geryi</i> Hoedeman, 1961	F	F								
<i>Pimelodella leptosoma</i> (Fowler, 1914)	F	F								
<i>Pimelodella macturki</i> Eigenmann, 1912	F	F								
<i>Pimelodella megalops</i> Eigenmann, 1912	F	F								
<i>Pimelodella procerata</i> Mees, 1983	F	F								
<i>Rhamdia fofa</i> (Müller & Troschel, 1848)	F	F								
<i>Rhamdia queuel</i> Quoy & Gaimard, 1824	F	F								
<b>Family: Pimelodidae</b>										
<i>Brachyplatystoma filamentosum</i> (Lichtenstein, 1819)	F	X								

Table I. - Continued.

Taxa	Habitat	Corantijn	Nickerie	Coppename	Saramacca	Suriname	Commewijne	Marowijne	‘Suriname’
<i>Brachyplatystoma rousseauxii</i> (Castelnau, 1855)	F	X		S	S	S			
<i>Brachyplatystoma vaillantii</i> (Valenciennes, 1840)	F	X			S	S			
<i>Hemisorubim platyrhynchos</i> (Valenciennes, 1840)	F	X			S	S			
<i>Hypophthalmus marginatus</i> Valenciennes, 1840	F	X							
<i>Phractocephalus hemiolopterus</i> (Bloch & Schneider, 1801)	F	S							
<i>Pimelodulus moli</i> Parisi & Lundberg, 2009	F	T	X			T			
<i>Pimelodus albifasciatus</i> Mees, 1974	F	X	X				T	T	
<i>Pimelodus bleekii</i> Valenciennes, 1840	F	S	X				T	T	
<i>Pimelodus ornatus</i> Kner, 1858	F	S							
<i>Pseudoplatystoma fasciatum</i> (Linnaeus, 1766)	F	S							
<i>Pseudoplatystoma tigrinum</i> (Valenciennes, 1862)	F								
<b>Family: Ariidae</b>									
<i>Bagre bagre</i> (Linnaeus, 1766)	BM	X							
<i>Bagre marinus</i> (Mitchill, 1815)	BM	X							
<i>Cathorops arenatus</i> (Valenciennes, 1840)	BM	X							
<i>Cathorops spixii</i> (Agassiz, 1829)	BM	X							
<i>Amphiarrius phrygianus</i> (Valenciennes, 1840)	BM	X							
<i>Amphiarrius rugosipinnis</i> (Valenciennes, 1840)	BM	X							
<i>Aspistor quadriseptis</i> (Valenciennes, 1840)	FBM								
<i>Notarius grandicassis</i> (Valenciennes, 1840)	FBM	X							
<i>Sciaudes couma</i> (Valenciennes, 1840)	FBM	X							
<i>Sciaudes herzbergii</i> (Bloch, 1794)	BM	X							
<i>Sciaudes parkeri</i> (Trail, 1832)	B	X							
<i>Sciaudes passany</i> (Valenciennes, 1840)	BM	X							
<i>Sciaudes proops</i> (Valenciennes, 1840)	FB								
<b>Family: Doradidae</b>									
<i>Acanthodoras cataphractus</i> (Linnaeus, 1758)	F	X							
<i>Amblydoras affinis</i> (Kner, 1855)	F	X							
<i>Doras carinatus</i> (Linnaeus, 1766)	F	X							
<i>Doras micropterus</i> (Eigenmann, 1912)	F	X							
<i>Playtdoras costatus</i> (Linnaeus, 1758)	F	S							
<i>Playtdoras</i> sp.	F	X							
<i>Perodoras</i> aff. <i>granulosus</i> (Valenciennes, 1821)	F	X							
<b>Family: Auchenipteridae</b>									
<i>Ageneiosus inermis</i> (Linnaeus, 1766)	F	X							
<i>Ageneiosus marmoratus</i> Eigenmann, 1912	F	S							
<i>Auchenipterus dentatus</i> Valenciennes, 1840	F	S							
<i>Auchenipterus nuchalis</i> (Spix & Agassiz, 1829)	F	X							
<i>Centromochlus concolor</i> (Mees, 1974)	F								
<i>Centromochlus punctatus</i> (Mees, 1974)	F	X							

Table I. - Continued.

	Taxa	Taxa	Habitat	Corantijn	Nickerie	Coppename	Saramacca	Suriname	Commewijne	Marowijne	‘Suriname’
	<i>Glaniidium leopardum</i> (Hoedeman, 1961)		F			X		S		T	
	<i>Pseudachenipterus nodosus</i> (Bloch, 1794)	F(B)	X					T		X	
	<i>Tatia brunnnea</i> Mees, 1974	F	S	S	S	S	S	S		S	
	<i>Tatia gyrina</i> (Eigenmann & Allen, 1942)	F	S	S	S	S	S	S		T.C. creutzbergi	
	<i>Tatia intermedia</i> (Steindachner, 1877)	F	S	S	S	X	S	X		X	
	<i>Trachelyopterus galeatus</i> (Linnaeus, 1766)	F									
<b>Order: Gymnotiformes</b>											
<b>Family: Gymnotidae</b>											
	<i>Electrophorus electricus</i> (Linnaeus, 1766)	F	X	X	S	X	X	X		X	
	<i>Gymnotus anguillaris</i> Hoedeman, 1962	F	X	X	X	X	X	T		S	
	<i>Gymnotus carapo</i> Linnaeus, 1758	F	S	X	X	X	X	S		X	
	<i>Gymnotus coropinae</i> Hoedeman, 1962	F									
<b>Family: Sternopygidae</b>											
	<i>Eigenmannia</i> sp.1	F	X								
	<i>Eigenmannia</i> sp.2	F	X								
	<i>Japignia kirschbaumi</i> Meunier, Jégu & Keith, 2011	F	X								
	<i>Rhabdolichops jegui</i> Keith & Meunier, 2000	F	X								
	<i>Sternopygus macrurus</i> (Bloch & Schneider, 1801)	F	X								
<b>Family: Rhamphichthyidae</b>											
	<i>Gymnorhamphichthys rondoni</i> (Miranda Ribeiro, 1920)	F	S	S	S	X	S				
	<i>Rhamphichthys rostratus</i> (Linnaeus, 1766)	F	X								
<b>Family: Hypopomidae</b>											
	<i>Brachyhypopomus beebei</i> (Schultz, 1944)	F	S								
	<i>Brachyhypopomus brevirostris</i> (Steindachner, 1868)	F	X								
	<i>Brachyhypopomus</i> sp.1	F	S								
	<i>Brachyhypopomus</i> sp.2	F									
	<i>Brachyhypopomus pinnicaudatus</i> (Hopkins, 1991)	F									
	<i>Hyppopomus ariadi</i> (Kaup, 1856)	F	X	S	S	X	S	S			
	<i>Hyppopomus lepturus</i> Hoedeman, 1962	F	X	X	X	X	S	S			
<b>Family: Apteronotidae</b>											
	<i>Apteronotus albifrons</i> (Linnaeus, 1766)	F									
	<i>Poropercus gymnotus</i> Ellis in Eigenmann, 1912	F									
	<i>Sternarchorhynchus galibi</i> de Santana & Vari, 2010	F									
<b>Order: Batrachoidiformes</b>											
<b>Family: Batrachoididae</b>											
	<i>Batrachoides surinamensis</i> (Bloch & Schneider, 1801)	BM	X			S	X	X		X	
<b>Order: Mugiliformes</b>											
<b>Family: Mugilidae</b>											
	<i>Mugil cephalus</i> Linnaeus, 1758	FBM	X							X	
	<i>Mugil incilis</i> Hancock, 1830	BM								X	

Table I. - Continued.

Taxa	Habitat	Corantijn	Nickerie	Coppename	Saramacca	Suriname	Commewijne	Marowijne	‘Suriname’
	FBM	X						X	
<b>Order: Cyprinodontiformes</b>									
<b>Family: Rivulidae</b>									
<i>Kryptolebias marmoratus</i> (Poey, 1880)	F(B)								
<i>Kryptolebias septemvermeulen &amp; Hrbek, 2005</i>	F	S	S	S	T			X	T
<i>Rivulus agilae</i> Hoedeman, 1954	F	S	S			X		S	S
<i>Rivulus amphoreus</i> Huber, 1979	F							X	S
<i>Rivulus breviceps</i> Eigenmann, 1909	F							T	T
<i>Rivulus frenatus</i> Eigenmann, 1912	F							S	S
<i>Rivulus gaucheri</i> Keith, Nandrin & Le Bail, 2006	F	X						X	X
<i>Rivulus aff. holmiae</i> Eigenmann, 1909	F							X?	
<i>Rivulus igneus</i> Huber, 1991	F							S	X
<i>Rivulus aff. lanceolatus</i> Eigenmann, 1909	F	S	S					S	X
<i>Rivulus cf. lanceolatus</i> Eigenmann, 1909	F	S						X	X
<i>Rivulus lunig</i> Berkenkamp, 1984	F(B)	S	S					X?	
<i>Rivulus stagnatus</i> Eigenmann, 1909	F	S	S	S	S			S	S
<b>Family: Poeciliidae</b>									
<i>Micropoecilia bifurca</i> (Eigenmann, 1909)	F							S	X
<i>Micropoecilia parae</i> (Eigenmann, 1894)	F(B)							S	X
<i>Micropoecilia picta</i> (Regan, 1913)	F(B)	X						S	X
<i>Poecilia reticulata</i> Peters, 1859	F(B)							S	X
<i>Poecilia vivipara</i> Bloch & Schneider, 1801	F(B)							S	X
<i>Tomeurus gracilis</i> Eigenmann, 1909	F	X						X	T
<b>Family: Anablepidae</b>									
<i>Anableps anableps</i> (Linnaeus, 1758)	F(B)	X						S	
<i>Anableps microlepis</i> Müller & Troschel, 1844	F(B)	X		X				X	
<b>Order: Belontiiformes</b>									
<b>Family: Belontidae</b>									
<i>Potamorhaphis guianensis</i> (Jardine, 1843)	F	X						S	
<i>Pseudorylosurus microps</i> (Günther, 1866)	F							X	
<i>Strongylura marina</i> (Walbaum, 1792)	FMB								T
<b>Family: Hemiramphidae</b>									
<i>Hyporhamphus roberti roberti</i> (Valenciennes, 1847)	BM	X						X	
<b>Order: Gasterosteiformes</b>									
<b>Family: Syngnathidae</b>									
<i>Pseudophallus aff. brasiliensis</i> Dawson, 1974	F	S						S	
<b>Order: Syngnathiformes</b>									
<b>Family: Syngnathidae</b>									
<i>Syngnathus marmoratus</i> Bloch, 1795	F	X						X	T

Table I. - Continued.

Order: Perciformes	Taxa	Habitat	Corantijn	Nickerie	Coppename	Saramacca	Suriname	Commewijne	Marowijne	Commewijne	Marowijne	‘Suriname’
<b>Family: Centropomidae</b>												
<i>Centropomus ensiferus</i> Poey, 1860		FBM	X			X				X		
<i>Centropomus parallelus</i> Poey, 1860		FBM	X			X				X		
<i>Centropomus undecimalis</i> (Bloch, 1792)		FBM	X			X				X		
<b>Family: Serranidae</b>												
<i>Epinephelus itajara</i> (Lichtenstein, 1822)		BM				X				X		
<b>Family: Carangidae</b>												
<i>Caranx hippos</i> (Linnaeus, 1766)		FBM				X				X		
<i>Caranx latus</i> Agassiz, 1831		FBM				X				X		
<i>Oligoplites saliens</i> (Bloch, 1793)		BM				X				X		
<i>Selene vomer</i> (Linnaeus, 1758)		BM				X				X		
<i>Trachinotus cayennensis</i> (Cuvier, 1832)		BM				X				X		
<b>Family: Lutjanidae</b>												
<i>Lutjanus jocu</i> (Bloch & Schneider, 1801)		BM				X				X		
<i>Lutjanus synagris</i> (Linnaeus, 1758)		BM				X				X		
<b>Family: Lobotidae</b>												
<i>Lobotes surinamensis</i> (Bloch, 1790)		BM				X				X		
<b>Family: Gerreidae</b>												
<i>Diapterus rhombatus</i> (Cuvier, 1829)		BM				X				X		
<b>Family: Haemulidae</b>												
<i>Genyatremus latetus</i> (Bloch, 1790)		BM	X	X		X				X		
<b>Family: Sciaenidae</b>												
<i>Bairdiella ronchus</i> (Cuvier, 1830)		BM				X				X		
<i>Cynoscion acoupa</i> (Lacepède, 1801)		FBM	X			X				X		
<i>Cynoscion januicensis</i> (Valiant & Bocourt, 1883)		BM				X				X		
<i>Cynoscion steindachneri</i> (Jordan, 1889)		FBM				X				X		
<i>Cynoscion virens</i> (Cuvier, 1830)		BM	T			X				X		
<i>Lonchurus elegans</i> (Boeseman, 1948)		BM	X			X				X		
<i>Lonchurus lanceolatus</i> (Bloch, 1788)		BM	X			X				X		
<i>Macrodon ancylodon</i> (Bloch & Schneider, 1801)		BM	X			X				X		
<i>Microtropogonias furnieri</i> (Desmarest, 1823)		BM				X				X		
<i>Nebris microps</i> Cuvier, 1830		BM				X				X		
<i>Pachyrops fourcroi</i> (Lacepède, 1802)	F	S				X				X		
<i>Pachyrops trifilis</i> (Müller & Troschel, 1849)	F					X				X?		
<i>Pachyurus schomburgkii</i> Günther, 1860	F					X				X		
<i>Plagioscion auratus</i> (Casteleau, 1855)	F					S				X		
<i>Plagioscion squamosissimus</i> (Heckel, 1840)	F					S				X		
<i>Stellifer microps</i> (Steindachner, 1894)		BM				X				T - P. surinamensis		

Table I. - Continued.

	Taxa	Habitat	Corantijn	Nickerie	Coppenname	Saramacca	Suriname	Commewijne	Marowijne	‘Suriname’
<i>Stellifer rastifer</i> (Jordan, 1889)	BM	BM	X			X	X			T
<i>Stellifer stellifer</i> (Bloch, 1790)	BM	BM	X	X	X	X	X	X		T
<b>Family: Polycentridae</b>										
<i>Polycentrus schomburgkii</i> Müller & Troschel, 1849	F	X								
<b>Family: Cichlidae</b>										
<i>Aequidens palaeoneurus</i> Kullander & Nijssen, 1989	F									
<i>Aequidens tetramerus</i> (Heckel, 1840)	F	S	S	S	S	S	S			
<i>Aequidens orthmanni</i> (Eigenmann, 1912)	F	S	S	S	S	S	S			
<i>Apistogramma steindachneri</i> (Regan, 1908)	F	S								
<i>Chaetobranchus flavescens</i> Heckel, 1840	F	X								
<i>Cichla monoculus</i> Spix & Agassiz, 1831	F	S	S	S	S	S	S			
<i>Cichla ocellaris</i> Bloch & Schneider, 1801	F	S	S	S	S	S	S			
<i>Cichlasoma bimaculatum</i> (Linnaeus, 1758)	F	S	S	S	S	S	S			
<i>Cleithracara maronii</i> (Steindachner, 1881)	F	S	S	S	S	S	S			
<i>Crenicichla albopunctata</i> Pellegrin, 1904	F									
<i>Crenicichla coppenanensis</i> Ploeg, 1987	F									
<i>Crenicichla lugubris</i> Heckel, 1840	F	S								
<i>Crenicichla multispinosa</i> Pellegrin, 1903	F	S	T							
<i>Crenicichla nickeriensis</i> Ploeg, 1987	F	S	S							
<i>Crenicichla saxatilis</i> (Linnaeus, 1758)	F	T	S							
<i>Crenicichla spatlwini</i> Ploeg, 1987	F	S	T							
<i>Geophagus brachybranchus</i> Kullander & Nijssen, 1989	F									
<i>Geophagus brokopondo</i> Kullander & Nijssen, 1989	F									
<i>Geophagus harterti</i> Gosse, 1766	F									
<i>Geophagus surinamensis</i> (Bloch, 1791)	F									
<i>Guianacara ocellariensis</i> Kullander & Nijssen, 1989	F	X								
<i>Guianacara owrewei</i> Kullander & Nijssen, 1989	F	T								
<i>Guianacara sphenozena</i> Kullander & Nijssen, 1989	F	S								
<i>Krobia guianensis</i> (Regan, 1905)	F									
<i>Krobia itanyi</i> (Puyo, 1943)	F									
<i>Mesonauta guyanae</i> Schindler, 1998 *	F									
<i>Nannacara anomala</i> Regan, 1905	F	S	S	X	S	S	S			
<i>Oreochromis mossambicus</i> (Peters, 1852) *	F(B)	X	X							
<i>Pterophyllum scalare</i> (Schultze, 1823)	F	X			X					
<i>Satanoperca leucosticta</i> (Müller & Troschel, 1849)	F	X	S							
<b>Family: Eleotridae</b>										
<i>Dormitator lophocephalus</i> Hoedeman, 1951	F									
<i>Dormitator maculatus</i> (Bloch, 1785)	F(B)									
<i>Eleotris amblyopsis</i> (Cope, 1871)	F(B)	X								
<i>Eleotris pisonis</i> (Gmelin, 1789)	F(B)	X?								

Table I. - End.

Taxa	Habitat	Corantijn	Nickerie	Coppename	Saramaccia	Suriname	Commewijne	Marowijne	'Suriname'
<i>Guavina guavina</i> (Valenciennes, 1837)	FBM					X?			T
<b>Family: Gobiidae</b>									
<i>Awaous flavus</i> (Valenciennes, 1837)	FB	X				X			T
<i>Ctenogobius phenacus</i> (Pezold & Lasala, 1987)	BM	X				X			
<i>Ctenogobius pseudofasciatus</i> (Gilbert & Randall, 1971)	FBM					T			
<i>Ctenogobius thoropsis</i> (Pezold & Gilbert, 1987)	FBM	X				X			
<i>Eurohodus lyricus</i> (Girard, 1858)	FBM								T?
<i>Gobioides broussonnetii</i> Lacépède, 1800	FBM	X				X			
<i>Gobioides grahamiae</i> (Palmer & Wheeler, 1995)	FBM	X				X			
<i>Gobionellus oceanicus</i> (Pallas, 1770)	FBM	X				X			
<b>Family: Ephippidae</b>									
<i>Chaetodipterus faber</i> (Broussonet, 1782)	BM								
<b>Family: Trichiuridae</b>									
<i>Trichiurus lepturus</i> Linnaeus, 1758	BM					X			
<b>Order: Pleuronectiformes</b>									
<b>Family: Paralichthyidae</b>									
<i>Syacium gunteri</i> Ginsburg, 1933	MB								
<i>Syacium micrurum</i> Ranzani, 1840	MB					X			
<i>Syacium papillosum</i> (Linnaeus, 1758)	MB	X				X			
<b>Family: Achiridae</b>									
<i>Achirus achirus</i> (Linnaeus, 1758)	FBM					X			
<i>Achirus declivis</i> Chabanaud, 1940	BM					X			
<i>Apionichthys dumerili</i> Kaup, 1858	FBM	X				X			
<i>Trinectes paulistanus</i> (Miranda Ribeiro, 1915)	FBM					X			
<b>Family: Cynglossidae</b>									
<i>Syngnathus plumigera</i> (Bloch & Schneider, 1801)	BM					X			
<b>Order: Tetraodontiformes</b>									
<b>Family: Tetraodontidae</b>									
<i>Colomesus psittacus</i> (Bloch & Schneider, 1801)	FBM	X				X			
<i>Sphoeroides testudineus</i> (Linnaeus, 1758)	BM	X				X			

of Suriname have an estuarine character (low surface salinity, high suspended sediments) due to the massive discharge of Amazon fresh water carried northwestward by the North Brazil and Guiana currents (the Amazon River freshwater plume; Hu *et al.*, 2004) and fishes caught at sea some kilometers off the Surinamese coast may in fact live in brackish water. Basically our list is of species that we document to occur in the freshwaters of Suriname with the exception of rare marine intruders. We counted the categories F and F(B) as freshwater species.

We included five exotic species that were introduced purposely (e.g., the tilapia *Oreochromis mossambicus* introduced in 1954 for aquaculture; Lijding, 1958) or accidentally (e.g., the aquarium fishes *Paracheirodon axelrodi*, *Nannostomus harrisoni* and *Mesonauta guyanae* that escaped from aquarium export holding facilities close to the international airport near Paramaribo into the black-water Para River of the Suriname River system). The angelfish *Pterophyllum scalare* may have been introduced accidentally into the Para River, but in Kaboeri Creek, a tributary of Corantijn River, it is almost certainly native. Exotics are marked with an asterisk in table I.

The Surinamese freshwater fish fauna is best understood as a component of the Guiana Shield freshwater fish fauna, either as part of the Guianas freshwater ecoregion including the Corantijn (Corentyne) River system (Abell *et al.*, 2008) or as part of the 'Atlantic coastal rivers' excluding the Corantijn basin (Lujan and Armbruster, 2011). Here, we reported the distribution of each species in the checklist within the context of the seven main river basins of Suriname. These are from east to west Marowijne (Maroni), Commewijne, Suriname, Saramacca, Coppename, Nickerie and Corantijn (Corentyne) rivers (Fig. 1; Amatali, 1993). Records of fishes in tributaries of the Marowijne and Corantijn rivers in respectively French Guiana and Guyana were included in the checklist given that it is likely that they also occur in the portions of these river systems in Suriname; however, two recently described *Harttiella* species (*H. janmoli* and *H. parva*; Covain *et al.*, 2012) of the Marowijne basin were not included because the restricted distribution of most known *Harttiella* species reduces the probability that they also occur on Surinamese territory.

## RESULTS

The checklist (Tab. I) cites 481 species of fishes in 16 orders and 64 families as inhabiting the fresh- and brackish-waters of Suriname, with 394 of these species restricted to freshwaters (habitats F and F(B)). Of the total of 481 species, 187 (38.9%) were based on type series that originated within Suriname of which 167 are freshwater species (Tab. I). Dominant in the Surinamese inland fish fauna is the

superorder Ostariophysi with 338 species (70.3% of total number of fresh- and brackish-water species) with most of these being freshwater species (325 species or 82.5% of the total number of freshwater species). The two most speciose orders in the inland waters of Suriname are the Siluriformes with 170 species of which 157 are freshwater species and represent 39.8% of the total freshwater species and the Characiformes with 147 species, all of which are freshwater and which constitute 37.3% of the freshwater species (Tab. II). Other orders with noteworthy numbers of species are the Perciformes with 78 species, only 40 of which are freshwater species, Gymnotiformes with 21 species all of which are limited to fresh-water, and Cyprinodontiformes with 21 species in total, all of which are freshwater forms. Families with the most species in Suriname are the Characidae (83 freshwater species), Loricariidae (60 freshwater species), Cichlidae (30 freshwater species), Callichthyidae (23 freshwater species), Heptapteridae (19 freshwater species), Sciaenidae (18 species, with 5 limited to fresh-water) and Anostomidae (17 freshwater species) (Tab. II).

We identified 25 species in the Checklist as presently known only from freshwater habitats within Suriname and are thus endemic to that country. This number increases to 89 endemic species (22.6% of all freshwater species) if the boundary Marowijne/Mana and Corantijn rivers whose watersheds extend into French Guiana and Guyana, respectively, are included in the total. Most of these endemic species are known from only one or two river systems (see Tab. I) within the expanse including the Marowijne and Corantijn rivers.

Some of the endemic species are threatened with extinction, most notably two loricariid catfishes *Harttiella crassicauda* and *Guyanancistrus* sp. with an extremely restricted documented distribution in Paramaka Creek in the Nassau Mountains which is the location of a proposed bauxite mine. Other species that are not necessarily endemic to Suriname are locally endangered due to their low population densities within the country (e.g., *Pseudophallus* aff. *brasiliensis*; Mol, 2012).

For purposes of comparisons of fish faunas, the seven Surinamese river basins can be grouped into large, medium and small river systems. The two large rivers, the Corantijn and Marowijne, have drainage areas of 67,600 and 68,700 km<sup>2</sup>, respectively, and mean discharges of 1,570 and 1,780 m<sup>3</sup>/s, respectively. The two medium-sized rivers, the Coppename and Suriname, have drainage areas of 21,700 and 16,500 km<sup>2</sup>, respectively, and mean discharges of 500 and 430 m<sup>3</sup>/s, respectively. Finally, the three small rivers, the Nickerie, Saramacca and Commewijne, all have their lower courses deflected to the west as a consequence of deposition of sediments by the Guiana Current and have drainage areas of 10,100, 9,000 and 6,600 km<sup>2</sup>, respectively, and mean dis-

Table II. - Number of species in each order and (sub)fAMILY of fishes present in the fresh- or fresh-and-brackish waters of Suriname. Drainage area's (km<sup>2</sup>) of the river systems (Amatali, 1993) in parentheses.

Taxa	Species in fresh- and/ or brackish water	%	Species in freshwater only	%	Corantijn (67,600)	Nickerie (10,100)	Coppename (21,700)	Saramacca (9,000)	Suriname (16,500)	Commewijne (6,600)	Marowijne (68,700)
<b>Order: Pristiformes</b>	<b>1</b>	<b>0.21</b>	<b>0</b>	<b>0.00</b>							
Family: Pristidae	1	<b>0.21</b>	0	<b>0.00</b>	0	0	0	0	1	0	1
<b>Order: Myliobatiformes</b>	<b>3</b>	<b>0.62</b>	<b>3</b>	<b>0.76</b>							
Family: Potamotrygonidae	3	<b>0.62</b>	3	<b>0.76</b>	2	1	1	0	1	0	2
<b>Order: Elopiformes</b>	<b>2</b>	<b>0.42</b>	<b>0</b>	<b>0.00</b>							
Family: Megalopidae	1	<b>0.21</b>	0		1	0	0	1	1	0	1
Family: Elopidae	1	<b>0.21</b>	0		0	1	0	0	1	1	0
<b>Order: Clupeiformes</b>	<b>18</b>	<b>3.74</b>	<b>1</b>	<b>0.25</b>							
Family: Clupeidae	3	<b>0.62</b>	0		1	1	2	0	3	0	1
Family: Engraulidae	12	<b>2.49</b>	1	<b>0.25</b>	9	1	6	1	8	0	10
Family: Pristigasteridae	3	<b>0.62</b>	0		3	0	2	0	3	0	1
<b>Order: Characiformes</b>	<b>147</b>	<b>30.56</b>	<b>147</b>	<b>37.31</b>							
Family: Parodontidae	1	<b>0.21</b>	1	<b>0.25</b>	1	0	1	1	1	0	1
Family: Curimatidae	8	<b>1.66</b>	8	<b>2.03</b>	5	3	2	3	6	4	8
Family: Prochilodontidae	2	<b>0.42</b>	2	<b>0.51</b>	1	1	1	1	1	1	2
Family: Anostomidae	17	<b>3.53</b>	17	<b>4.31</b>	11	6	7	6	7	3	13
Family: Chilodontidae	4	<b>0.83</b>	4	<b>1.02</b>	2	1	0	0	3	2	2
Family: Crenuchidae	6	<b>1.25</b>	6	<b>1.52</b>	5	1	4	4	4	4	6
Family: Hemiodontidae	7	<b>1.46</b>	7	<b>1.78</b>	4	3	3	1	4	0	4
Family: Gasteropelecidae	2	<b>0.42</b>	2	<b>0.51</b>	2	2	1	2	2	2	2
Family: Alestidae	1	<b>0.21</b>	1	<b>0.25</b>	1	1	1	1	1	1	1
Family: Characidae	83	<b>17.26</b>	83	<b>21.07</b>	51	28	39	35	56	23	65
Genera Incerta Sedis	45	<b>9.36</b>	45	<b>11.42</b>	27	20	24	16	31	14	34
Subfamily: Iguanodectinae	2	<b>0.42</b>	2	<b>0.51</b>	1	0	0	1	1	1	2
Subfamily: Bryconinae	3	<b>0.62</b>	3	<b>0.76</b>	2	1	2	2	2	0	3
Subfamily: Serrasalminae	13	<b>2.70</b>	13	<b>3.30</b>	5	4	6	7	9	4	11
Subfamily: Aphyocharacinae	1	<b>0.21</b>	1	<b>0.25</b>	1	0	0	0	0	0	0
Subfamily: Characinae	8	<b>1.66</b>	8	<b>2.03</b>	7	2	3	5	7	2	5
Subfamily: Stethaprioninae	3	<b>0.62</b>	3	<b>0.76</b>	3	1	2	2	3	1	2
Subfamily: Tetragonopterinae	2	<b>0.42</b>	2	<b>0.51</b>	2	0	1	1	1	1	2
Subfamily: Stevardiinae	5	<b>1.04</b>	5	<b>1.27</b>	2	0	1	1	2	0	5
Subfamily: Cheirodontinae	1	<b>0.21</b>	1	<b>0.25</b>	1	0	0	0	0	0	1
Family: Acestrorhynchidae	2	<b>0.42</b>	2	<b>0.51</b>	2	2	2	2	2	2	2
Family: Cynodontidae	2	<b>0.42</b>	2	<b>0.51</b>	1	0	0	0	1	0	1
Family: Erythrinidae	5	<b>1.04</b>	5	<b>1.27</b>	5	4	5	4	5	2	4
Family: Lebiasinidae	7	<b>1.46</b>	7	<b>1.78</b>	5	1	2	3	7	6	6
<b>Order: Siluriformes</b>	<b>170</b>	<b>35.34</b>	<b>157</b>	<b>39.85</b>							
Family: Cetopsidae	3	<b>0.62</b>	3	<b>0.76</b>	3	1	2	2	2	1	2
Family: Aspredinidae	8	<b>1.66</b>	8	<b>2.03</b>	4	2	5	4	6	1	6
Family: Trichomycteridae	7	<b>1.46</b>	7	<b>1.78</b>	4	2	2	2	2	0	4
Family: Callichthyidae	23	<b>4.78</b>	23	<b>5.84</b>	14	5	8	10	11	5	11
Family: Loricariidae	60	<b>12.47</b>	60	<b>15.23</b>	21	14	11	11	20	12	28
Subfamily: Hypoptopomatinae	4	<b>0.83</b>	4	<b>1.02</b>	1	2	1	0	2	0	2
Subfamily: Loricariinae	17	<b>3.53</b>	17	<b>4.31</b>	9	6	4	4	6	3	9
Subfamily: Hypostominae	39	<b>8.11</b>	39	<b>9.90</b>	11	6	6	7	12	9	17
Family: Pseudopimelodidae	6	<b>1.25</b>	6	<b>1.52</b>	5	3	2	2	5	1	5
Family: Heptapteridae	19	<b>3.95</b>	19	<b>4.82</b>	8	5	3	3	7	3	16
Family: Pimelodidae	12	<b>2.49</b>	12	<b>3.05</b>	10	2	4	3	9	1	7

Table II. - Continued.

Taxa		Species in fresh- and/ or brackish water	%	Species in freshwater only	%	Corantijn (67,600)	Nickerie (10,100)	Coppename (21,700)	Saramacca (9,000)	Suriname (16,500)	Commewijne (6,600)	Marowijne (68,700)
Family: Ariidae	13	<b>2.70</b>	0			8	3	3	1	8	0	11
Family: Doradidae	7	<b>1.46</b>	7	<b>1.78</b>	6	3	2	2	3	1	4	
Family: Auchenipteridae	12	<b>2.49</b>	12	<b>3.05</b>	8	3	3	5	9	2	9	
<b>Order: Gymnotiformes</b>	<b>21</b>	<b>4.37</b>	<b>21</b>	<b>5.33</b>								
Family: Gymnotidae	4	<b>0.83</b>	4	<b>1.02</b>	3	3	3	3	4	2	4	
Family: Sternopygidae	5	<b>1.04</b>	5	<b>1.27</b>	4	1	3	2	1	4	4	
Family: Rhamphichthyidae	2	<b>0.42</b>	2	<b>0.51</b>	2	1	1	1	1	0	1	
Family: Hypopomidae	7	<b>1.46</b>	7	<b>1.78</b>	4	2	3	3	5	7	4	
Family: Apterontidae	3	<b>0.62</b>	3	<b>0.76</b>	1	1	0	1	2	0	3	
<b>Order: Batrachoidiformes</b>	<b>1</b>	<b>0.21</b>	<b>0</b>	<b>0.00</b>								
Family: Batrachoididae	1	<b>0.21</b>	0		1	0	1	1	1	0	1	
<b>Order: Mugiliformes</b>	<b>3</b>	<b>0.62</b>	<b>0</b>	<b>0.00</b>								
Family: Mugilidae	3	<b>0.62</b>	0		2	0	1	0	1	0	3	
<b>Order: Cyprinodontiformes</b>	<b>21</b>	<b>4.37</b>	<b>21</b>	<b>5.33</b>								
Family: Rivulidae	13	<b>2.70</b>	13	<b>3.30</b>	5	3	5	2	6	2	10	
Family: Poeciliidae	6	<b>1.25</b>	6	<b>1.52</b>	2	1	0	4	6	3	3	
Family: Anablepidae	2	<b>0.42</b>	2	<b>0.51</b>	2	0	1	0	2	0	1	
<b>Order: Beloniformes</b>	<b>4</b>	<b>0.83</b>	<b>2</b>	<b>0.51</b>								
Family: Belonidae	3	<b>0.62</b>	2	<b>0.51</b>	1	1	1	1	3	1	2	
Family: Hemiramphidae	1	<b>0.21</b>	0		1	0	0	0	1	0	1	
<b>Order: Gasterosteiformes</b>	<b>1</b>	<b>0.21</b>	<b>1</b>	<b>0.25</b>								
Family: Syngnathidae	1	<b>0.21</b>	1	<b>0.25</b>	1	0	0	0	1	0	0	
<b>Order: Synbranchiformes</b>	<b>1</b>	<b>0.21</b>	<b>1</b>	<b>0.25</b>								
Family: Synbranchidae	1	<b>0.21</b>	1	<b>0.25</b>	1	0	1	1	1	1	1	
<b>Order: Perciformes</b>	<b>78</b>	<b>16.22</b>	<b>40</b>	<b>10.15</b>								
Family: Centropomidae	3	<b>0.62</b>	0		2	0	2	0	3	0	3	
Family: Serranidae	1	<b>0.21</b>	0		0	0	0	0	1	1	1	
Family: Carangidae	5	<b>1.04</b>	0		0	0	0	0	4	1	4	
Family: Lutjanidae	2	<b>0.42</b>	0		0	0	0	0	0	2	0	
Family: Lobotidae	1	<b>0.21</b>	0		0	0	0	0	1	0	0	
Family: Gerreidae	1	<b>0.21</b>	0		0	0	0	0	0	1	0	
Family: Haemulidae	1	<b>0.21</b>	0		1	1	1	0	1	0	0	
Family: Sciaenidae	18	<b>3.74</b>	5	<b>1.27</b>	8	4	2	2	15	1	10	
Family: Polycentridae	1	<b>0.21</b>	1	<b>0.25</b>	1	1	1	1	1	1	1	
Family: Cichlidae	30	<b>6.24</b>	30	<b>7.61</b>	19	12	11	12	16	9	14	
Family: Eleotridae	5	<b>1.04</b>	4	<b>1.02</b>	2	0	0	0	5	0	1	
Family: Gobiidae	8	<b>1.66</b>	0		5	1	0	0	6	0	1	
Family: Ephippidae	1	<b>0.21</b>	0		0	0	0	0	0	1	0	
Family: Trichiuridae	1	<b>0.21</b>	0		0	0	0	0	1	1	0	
<b>Order: Pleuronectiformes</b>	<b>8</b>	<b>1.66</b>	<b>0</b>	<b>0.00</b>								
Family: Paralichthyidae	3	<b>0.62</b>	0		1	0	0	0	2	0	2	
Family: Achiridae	4	<b>0.83</b>	0		2	0	1	1	4	1	1	
Family: Cynoglossidae	1	<b>0.21</b>	0		0	0	0	0	1	0	0	
<b>Order: Tetraodontiformes</b>	<b>2</b>	<b>0.42</b>	<b>0</b>	<b>0.00</b>								
Family: Tetraodontidae	2	<b>0.42</b>	0		2	0	2	1	2	2	2	
Total number of species (/river system)	481	100	394	100	276	132	164	146	298	118	314	
Endemic species per river					11	3	6	3	5	3	28	

charges of 160, 240 and 120 m<sup>3</sup>/s, respectively (Amatali, 1993).

As would be expected, the fish faunas of the large river systems of Corantijn and Marowijne along the west and east boundaries of Suriname are the richest both in terms of total numbers of species (276 and 314, respectively; Tab. II) and numbers of endemic species (11 and 28, respectively; Tab. II). The medium-sized Suriname and Coppename rivers have 298 and 164 fish species, respectively, but the apparent difference in numbers of species in these basins may reflect the intense sampling of the ichthyofauna in the Suriname River that was associated with the Brokopondo project whereas no comparable effort has been expended on the fish fauna of the Coppename. The small rivers, the Nickerie, Saramacca and Commewijne, have only 132, 146 and 118 species, respectively (Tab. II).

## DISCUSSION

### Species richness

In the present paper we present a checklist of the 481 species of fishes from the fresh and brackish waters of Suriname. This number represents a 51% increase in documented total of species in these habitats over the last two decades. Among these 481 species are 394 species which spend their entire lives in the freshwater systems of the country. A major factor in these increased numbers are the many species that have been described during that interval (e.g., *Potamotrygon mariae*, *P. boesemani*, *Cyphocharax biocellatus*, *Leporinus apollo*, *Hypseobrycon borealis*, *Myloplus planquettei*, *Tometes lebaili*, *Tetragonopterus rarus*, *Bryconamericus guyanensis*, *Cetopsidium orientale*, *Harttia guianensis*, *Harttia fluminensis*, *Panaqolus koko*, *Peckoltia otali*, *Pseudancistrus corantnensis*, *P. kwinti*, *Pimelabditus moli*, *Japigny kirschbaumi*, *Rhabdolichops jegui*, *Sternarchorhynchus galibi*, *Kryptolebias sepia* and *Rivulus gaucheri*), many of which originated in ichthyologically relatively poorly sampled regions of Suriname. Other of the Surinamese fishes known to be part of the ichthyofauna of the country were described from samples collected at various times, sometimes long ago, but which were unidentified or misidentified in museum collections (e.g., *Phenacogaster wayana*, *Hoplias curupira*). Yet other of the species contributing to this increased diversity represent new records within Suriname of species previously known to occur in Guyana and/or French Guiana. Future collecting efforts in poorly sampled regions and habitats and critical analysis of the many problematic genera will undoubtedly reveal that dozens of freshwater fish species in Surinamese rivers are as-of-yet unknown to science (e.g., Cardoso and Montoya-Burgos, 2009;

also see Tab. I). The great unknown is the degree to which future studies add to the list of species in this paper.

With 394 now known species, the Surinamese freshwater ichthyofauna includes considerably fewer species than the speciose fish faunas of various countries whose boundaries include portions of the Amazon basin, home to the most speciose ichthyofauna of any river system in the world [e.g., Brazil with 2,587 species (Buckup *et al.*, 2007) and Colombia with 1,435 species (Maldonado-Ocampo *et al.*, 2008)]. The number of Surinamese freshwater fish species is, however, to a large degree comparable in size to the fish faunas of neighboring countries/territory of the Guiana Shield (i.e., Guyana with 430 species, a portion of which only occur in that country in the Rio Branco of the Amazon River system; French Guiana with 367 species; Le Bail *et al.*, 2012; Tab. III). Moreover, when evaluated in terms of relative surface areas, the three relatively small Guiana Shield countries of Guyana, Suriname, and French Guiana (strictly a territory of France) have more freshwater fish species per square kilometer than the large countries occupying major portions of the Amazon basin (Brazil, Colombia, Peru and Bolivia) and approximately the same number of species per 1,000 km<sup>2</sup> as a small country such as Ecuador which includes western portions of the Amazon basin (Tab. III).

Of the many factors that contribute to the relative richness of the Surinamese freshwater fish fauna, the relative isolation of its river basins may be of paramount importance. A connection between the Marowijne River and the Amazon River system may have existed in the past (Cardoso and Montoya-Burgos, 2009), but at present the Surinamese river systems and the Amazon River system are completely isolated without either year-round connections such as that between the northern Amazon and the Rio Orinoco via the Rio Casiquiare (Winemiller *et al.*, 2008) or the seasonal connection between the upper portion of the Essequibo and the northeastern Amazon via the Takutu-Brancos-Negro rivers during high-water periods in the Rupununi Savannah, a connection known as the Rupununi Portal (Lowe-McConnell, 1964; Vari, 1988; de Souza *et al.*, 2012). Those Surinamese rivers that do connect to the Amazon basin (e.g., the Suriname, Commewijne, Nickerie, Saramacca, and Coppename) do so via the Marowijne River, which is a tributary of the Amazon River.

Table III. - Diversity of freshwater fishes of selected tropical South American countries.

Country	Surface area (km <sup>2</sup> )	# species	Source	#species/1,000 km <sup>2</sup>
Brazil	8,514,877	2587	Buckup <i>et al.</i> , 2007	0.3
Colombia	1,141,748	1435	Maldonado-Ocampo <i>et al.</i> , 2008	1.3
Venezuela	912,050	1198	Lasso <i>et al.</i> , 2004	1.3
Peru	1,285,216	1010	Ortega <i>et al.</i> , 2011	0.8
Ecuador	256,369	706	Barriga, 1991	2.8
Bolivia	1,098,581	635	Ibisch & Merida, 2003	0.6
Guyana	214,969	430	Vari <i>et al.</i> , 2009	2.0
Suriname	163,820	394	this work	2.4
French Guiana	83,534	367	Le Bail <i>et al.</i> , 2012	4.4

namese river systems that are presently connected in their lower reaches (Nickerie and Corantijn, Saramacca and Coppename, Commewijne and Suriname) were separate prior to the formation of the Coastal Plain (Late Tertiary to Quaternary). The more diverse fish faunas of the middle and upper reaches of the Surinamese rivers (i.e., the interior of the country, upstream of the first rapids) are still largely isolated from each other; although, as noted above, sharing some components. Other factors that contribute to the freshwater fish diversity in Suriname are topographic relief and associated differences in water conditions (e.g., the two endemic fish species of the Nassau Mountains) and differences in water types (e.g., the blackwater streams of the Savannah Belt and coastal swamps).

Although the designations of endemic species in this work (89 species with Corantijn and Marowijne rivers included) is subject to some degree of uncertainty due to low collection efforts in remote areas of the country, confidence in this estimate increases when one takes into account that most of these endemics (79 or 88.8%) are known to occur only in one or two river systems. Two Surinamese endemic species, *Harttiella crassicauda* and *Guyanancistrus* sp., are even restricted to a single mountain stream in the Nassau Mountains (Covain *et al.*, 2012).

Type localities for a number of Surinamese freshwater species are inexact (e.g., Suriname). Nonetheless, the high percentage of species with their type locality in Suriname (approximately 39%) probably reflects both the old history of ichthyology in Suriname commencing with the 19 species described by Linnaeus (see above) and the high endemism in the Surinamese freshwater fish fauna (22.6% of the freshwater species).

### State of knowledge

Maldonado-Ocampo *et al.* (2008) point out that the dramatically speciose fish faunas of many river systems in the Neotropics and the lack of critical analysis of this fauna for all major basins guarantees that ichthyofaunal compendia, be they for river systems or countries, will of necessity be underestimates. This clearly holds for the present checklist of Surinamese fresh- and brackish- water fishes. Nonetheless, the pace of analysis of already recognized species and the formal descriptions of new Neotropical freshwater fishes is accelerating (Vari and Malabarba, 1998) with some of the new species described in recent years originating from locations in Suriname. Arriving at a definitive listing of fishes inhabiting Surinamese inland waters is a long-term endeavor necessitating progress along two primary fronts. First a thorough sampling of all continental aquatic systems in Suriname, including the border rivers Marowijne and Corantijn, is required. Mountain streams, deep-river habitat and some of the smaller river systems in Suriname remain inadequately sampled or in some instances uncollected ichthyologically.

Even river systems that have been long the foci of ichthyological sampling (Marowijne, Suriname) continue to yield new species of fishes. Equally, or more, critical for arriving at an approximation of the species-level diversity are comprehensive revisionary studies encompassing all genera and families living in Suriname (Vari and Malabarba, 1998).

### Threats to the fish fauna

Human activities have severely affected the condition of freshwater ecosystems worldwide (Revenga *et al.*, 2005; Dudgeon *et al.*, 2006) and this also holds for the inland aquatic systems of Suriname. Physical alteration, habitat loss, water withdrawal, pollution, and the introduction of nonnative species all threaten the freshwater fish fauna in Suriname. The construction of a hydroelectric dam across the Suriname River at Afobakka resulting in the Brokopondo Reservoir (in 1964) has had a major impact on the fish fauna of the Middle Suriname River with numerous local extinctions (Mol *et al.*, 2007); however, to the best of our knowledge it did not result in the extinction of any Surinamese fish species.

The two endemic loricariids of Nassau Mountains, *Harttiella crassicauda* and *Guyanancistrus* sp. are threatened with extinction by a proposed bauxite mine. The 28 and 5 fish species endemic to the Marowijne and Suriname rivers, respectively, are threatened by a proposed dam in the Tapanahony River, a major tributary of the Marowijne River (the so-called Tapajai project). This dam would divert water from the Tapanahony River to the Brokopondo Reservoir (Suriname River system) and thus severely diminish the flow in the Marowijne River with consequent significant changes in aquatic habitats and likely the fish fauna downstream from the reservoir along that channel. In addition, the Tapanahony River diversion would also effectively connect the Marowijne and Suriname river systems, each with their own endemic species (present checklist), and mixing these faunas may well lead to an ecological disaster, i.e., the introduction of Marowijne endemics into the Suriname River system and *vice versa*. Uncontrolled 'small-scale' gold mining in the geological greenstone formation in eastern Suriname pollutes small rainforest streams and large rivers with mercury (Mol *et al.*, 2001) and increases sediment input, thus changing the instream habitat and the structure of fish communities (Mol and Ouboter, 2004). The immediate threat to a freshwater pipefish in Corantijn River, *Pseudophallus* aff. *brasiliensis*, was removed when the mining company that proposed to construct a jetty in its main habitat left Suriname, but population densities of this species are low and its survival in Suriname is still precarious (Mol, 2012).

Although incomplete data hampers efforts to estimate the true scale of these anthropogenic impacts on freshwater fishes and their habitats at both local and national scales it is clear that many species are threatened, especially those with

limited geographical ranges and/or small populations. An understanding of the diversity of the freshwater fish fauna of Suriname is crucial so that scientists, policy makers, resource managers, and members of the public can better evaluate the impact of man's activities on the freshwater fishes within the country. Although still incomplete, this checklist provides a baseline for continuing studies of Surinamese inland fishes including all aspects of ecology, life history, conservation, and sustainable use.

#### NOTES WITH THE CHECKLIST OF FRESHWATER FISHES OF SURINAME (Tab. I)

*Anchoviella* sp. is a small (3 cm SL) engraulid of the upper Marowijne River (above the rapids) that is probably part of a freshwater '*Anchoviella*' clade including other undescribed species from the Guianas (D. Bloom, pers. comm.).

A Surinamese curimatid lacking pigmentation spots, but with scales on the basal portions of the caudal fin is sometimes identified as *Curimatella albuna* in museum collections (NZCS, RMNH, ZMA). This is actually *Cyphocharax microcephalus* in which the field of scales on the caudal fin lobes is less extensive than in species of *Curimatella* (forming parabolic pattern on basal portions of lobes rather than across most of the lobes in adults, respectively) and in which the scales are of a different size (scales approximately the same size as those on caudal peduncle *versus* distinctly smaller, respectively).

*Leporinus pellegrinii*, *L. alternus* and *L. paralternus* are considered junior synonyms of *L. maculatus* (B. Sidlauskas, pers. comm.).

Pending further study, the small tetra with a conspicuous red line along on the midlateral surface of the body is tentatively identified as *Hyphessobrycon* 'redline' (F. Lima, pers. comm.). This species (or species group) is possibly identified as *Hemigrammus bellottii* in some museum collections (e.g., by J. Géry).

*Roeboexodon geryi* is here considered a synonym of *R. guyanensis* following Moreira and Lima (2011).

*Copella carsevennensis* and *C. eigenmanni* are junior synonyms of *C. arnoldi* (M. Marinho, pers. comm.).

*Bunocephalus aloikae* is a valid species that is present in the upper Marowijne River (A. Cardoso, pers. comm.).

*Ituglanis* sp. (Brownsberg) is a small, largely unpigmented *Ituglanis* species only known from the Brownsberg Mountains.

*Corydoras* aff. *breei* is based on Alexandrou *et al.* (2011).

*Corydoras oelemariensis* Nijssen, 1970 was considered a synonym of *C. baderi* (Reis in Reis *et al.*, 2003: 295), but may be a valid species.

*Megalechis personata* is a synonym of *M. thoracata* (Reis *et al.*, 2005).

Gen. nov. aff. *Parotocinclus* follows the identification in Le Bail *et al.* (2000).

*Cteniloricaria maculata* is a junior synonym of *C. platystoma* (Covain *et al.*, 2012).

*Farlowella parvicarinata* is herein considered a synonym of *F. rugosa*.

The genus *Guyanancistrus*, with *G. brevispinis* as type species, was revalidated (Covain and Fisch-Muller, 2012). *Guyanancistrus brevispinis* may constitute several species (Cardoso and Montoya-Burgos, 2009).

*Guyanancistrus* sp. (Nassau Mountains) is a small (4.5 cm SL) *Guyanancistrus* species with a large mouth; the species is only known from the Paramaka Creek in Nassau Mountains.

*Hemiancistrus macrops* and *H. megacephalus* were never collected again in Suriname, their type locality. These species were alternatively placed in *Hemiancistrus* (Ferraris, 2007; Eschmeyer and Fricke, 2011) and in *Pseudancistrus* (Armbruster, 2004; Vari *et al.*, 2009).

*Hypostomus nickeriensis* and *H. sipaliwini* are synonyms of *H. corantini*; *H. occidentalis*, *H. surinamensis* and *H. tapanahonensis* are synonyms of *H. gymnorhynchus*; *H. ventromaculatus* is a synonym of *H. plecostomus* (Weber *et al.*, 2012).

*Hypostomus macrophthalmus* and *H. pseudohemirurus*, with only juveniles as type specimens, was considered doubtful species (Weber *et al.*, 2012).

The type locality of *Pseudacanthicus fordii* is 'Suriname'; a *Pseudacanthicus* species is present in the upper Corantijn River.

The type locality of *Squaliforma tenuis* (Paramaribo) is doubtful since the species is only known from the holotype and no other representative of *Squaliforma* is known from Suriname (Weber *et al.*, 2012).

A small *Imparfinis* species (*Imparfinis* aff. *stictonotus*) is present in the upper Corantijn River.

*Platydoras* sp. has distinctly shallower scutes than does typical *P. costatus*. Preliminary analyses of molecular data (M. Arce, unpubl.) based on one specimen of each of the two Surinamese *Platydoras* (*P. costatus* from fish market in Paramaribo and *Platydoras* "shallow scute" from Lawa River) do not recover the two as closely related (M. Sabaj Pérez, pers. comm.).

*Centromochlus creutzbergi* Boeseman, 1953 was considered a synonym of *T. gyrina* (Sarmento-Soares and Martins-Pinheiro, 2008), but may be a valid species.

*Gymnotus anguillaris* was described from Coropina Creek, Para River, Suriname River system. Extensive recent collecting effort (including use of an electric fish finder apparatus) in the type locality and other tributaries of the Para River by W. Crampton and the senior author failed to collect

the species again (W. Crampton, pers. comm.), as well as in any other river in Suriname by the senior author.

*Eigenmannia* sp. 1 is characterized by a dusky anal fin and *Eigenmannia* sp. 2 by the presence of three thin longitudinal black lines (Willink and Sidlauskas, 2004).

*Brachyhypopomus* sp. 1 (Crampton and de Santana, unpubl.), with an accessory electric organ on the operculum, was collected in small forest creeks with leaf-litter on the streambed and slow water flow: Marshall Creek (Suriname River system) and small tributaries of the Cottica River, Commewijne River system (W. Crampton, pers. comm.).

*Brachyhypopomus* sp. 2, with dark transverse bands on the flanks, resembles *B. beebei*, but has a smaller body size (matures at less than 95 mm TL) and an electric organ discharge distinct from that of *B. beebei*. It is known from a single specimen collected in a small tributary of Cottica River, Commewijne River system, and resembles an undescribed species of *Brachyhypopomus* that is common around Belem (Brazil) (W. Crampton, pers. comm.).

The type locality of *Hypopygus lepturus* Hoedeman, 1962 ('Maroni basin, no exact locality') was restricted by Nijssen and Isbrücker (1972) to 'Maka Creek, at left bank of Lawa River, 10 km south of Stoelman's Island, Marowijne (Maroni) River system' (de Santana and Crampton, 2011).

*Kryptolebias (Rivulus) ocellatus* has a distribution that is restricted to southeastern Brazil; the brackish-water killifish from the mangroves of Suriname is *Kryptolebias marmoratus* (see Costa, 2006).

*Plagioscion surinamensis* is a synonym of *P. squamosissimus* (Casatti, 2005).

*Geophagus brokopondo* is only known from its type locality the Brokopondo Reservoir (dam closed in 1964). Kullander (pers. comm.) considers the species valid. However, in such artificial settings cichlids demonstrate ecophenotypic variation (e.g., Ponton and Mérigoux, 2000). A molecular analysis (e.g., barcoding) might resolve the question whether *G. brokopondo* is a valid species or an ecophenotype of *Geophagus surinamensis*.

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